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ABSTRACT

The Subcommittee on Courts, the Internet, and Intellectual Property, Committee on the Judiciary met, pursuant to call, at 2:15 p.m., in Room 2141, Rayburn House Office Building, to review the consumer benefits of today's digital rights management (DRM) solutions. The Honorable Howard Coble, a Representative in Congress from North Carolina and Chairman of the Subcommittee, presided. Opening statements are provided by the Honorable Howard Coble; the Honorable Howard L. Berman, a Representative in Congress from California, and Ranking Member, Subcommittee on Courts, the Internet, and Intellectual Property; and the Honorable Rick Boucher, a Representative in Congress from Virginia. The following witnesses provided oral testimonies and prepared statements: Mr. Will Poole, Vice President, Windows New Media Platforms Division, Microsoft Corporation Oral Testimony; Mr. James Alexander, Director, eBooks Publishing Adobe Systems, Inc.; Mr. Peter Jacobs, Chief Executive Officer, SunnComm, Inc.; and Mr. Frank Hausmann, Chief Executive Officer, CenterSpan Communications Corporation.Letters, statements, etc., submitted for the Hearing included: prepared statement of the Honorable Howard L. Berman; and prepared statement of the Honorable Zoe Lofgren, a Representative in Congress from California. An Appendix includes the following, submitted for the Hearing Record: prepared statement of William Krepick, President and CEO, Macrovision Corporation; prepared statement of Neil MacDonald, Vice President, Director of Research, Gartner; letter from Jonathan Zuck, President of Association for Competitive Technology; and letter from Chris Hoofnagle, Legislative Counsel, Electronic Privacy Information Center, Jason Young, IPIOP Clerk, Electronic Privacy Information Center, and Fred von Lohmann, Senior IP Attorney, Electronic Frontier Foundation. (AEF)

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CONSUMER BENEFITS OF TODAY'S DIGITAL RIGHTS MANAGEMENT (DRM) SOLUTIONS

ED 474 410

HEARING

BEFORE THE

SUBCOMMITTEE ON COURTS, THE INTERNET,
AND INTELLECTUAL PROPERTY

OF THE

COMMITTEE ON THE JUDICIARY
HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

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CONSUMER BENEFITS OF TODAY'S DIGITAL RIGHTS MANAGEMENT (DRM) SOLUTIONS

WEDNESDAY, JUNE 5, 2002

House of Representatives,
Subcommittee on Courts, the Internet,
and Intellectual Property,
Committee on the Judiciary,
Washington, DC.

The Subcommittee met, pursuant to call, at 2:15 p.m., in Room 2141, Rayburn House Office Building, Hon. Howard Coble [Chairman of the Subcommittee] presiding.

Mr. Coble. Good afternoon, ladies and gentlemen. The Subcommittee will come to order. In the interest of time, I am going to go ahead and make my opening statement, and by that time Howard Berman will probably be here.

As it is well known, our Subcommittee has long been devoted to the progress of the arts and the rights of artists by fighting against all varieties of piracy. In the digital era, the problem of copyright piracy is more significant than ever. Today DRM, known as Digital Rights Management, is known as a solution. DRM actually refers to a variety of technologies designed to balance consumers' rights in enjoying copyrighted works while concurrently preventing the piracy of those works.

As part of the Digital Millennium Copyright Act, new legal protections were placed into the law, such as combating the anti-circumvention of copyright protection systems. The DMCA created a robust marketplace of DRM technology for consumers.

In the 4 years since the DMCA became law, the results are clear. Consumers have benefited from the law, in my opinion, and there may be some people out there who will take issue with that, but in my opinion consumers have directly benefited from that law. There are more choices for consumers as a result of the protection it secures.

There is no doubt that DVDs would not have been placed on the market if the producers or studios could not use a DRM technology such as C-S-S to protect against piracy. Today, there is an explosion in DVD titles. The explosive phenomenon of DVDs could be traced to two facts, consumer demand and the legal protection against piracy tools. Further, I am pleased to say that these legal protections have been validated as constitutional when reviewed by the courts.

There are digital works online beyond audiovisual works in people's homes, including eBooks, software, video games, needlepoint, and architectural patterns. Each have a different set of issues, consumer demands and different business models in place. It is my hope that we can learn how the marketplace will continue to shape solutions so that the consumer can enjoy new works and new innovations, all in new ways.

As the Subcommittee reviews this issue, we are fortunate to have an array of experts on DRM technology who not only can offer their views as business and technology leaders, but can offer their perspectives on how consumers benefit from the DRM technologies currently in use.

Now, if anyone has a perfect solution to the digital piracy issue, I want you to meet Mr. Berman and me after the hearing, and we will turn a receptive ear to you. Realistically, however, it is my hope that today we can learn how the marketplace and current law are functioning and what, if any, additional Government action may be necessary. And if a modest bill such as one for a broadcast flag standard be deemed necessary by our Members to allow consumers to enjoy new digital copyrighted broadcasts and prevent piracy, it seems to me that our Subcommittee will be the home for the drafting and the review of same.

I am now pleased to recognize the distinguished gentleman from California, Ranking Member, Mr. Berman.

Mr. BERMAN. Well, thank you very much, Mr. Chairman, and on almost any issue within the jurisdiction of this Subcommittee you can speak for me quite safely, and there are probably some areas where I am not sure that that would be true, but in this Subcommittee it is definitely true.

And I want to thank you for holding the hearing and for indulging me by delaying it a few minutes so I could be part of a meeting with Secretary Powell in my other Committee.

Our purpose in this hearing is to learn about the plethora of new technologies that have been developed to provide consumers access to protected, copyrighted works. It is clear that consumer demand exists for digital copyrighted works. Unfortunately, in the absence of legitimate services the online demand is manifested largely through massive piracy.

Legitimate services do exist for software, newspapers, and to a certain extent books. Legitimate services have started to emerge in the music space and are being developed for movies. While some of these services do not yet provide sufficient convenience and functionality to prove compelling to consumers, it is clear that the foundation of any legitimate service is digital rights management.

The DVD format is an instructive success story. The first DVD players were sold in the United States in 1997. In less than 5 years, over 30 million DVD players have been sold in the U.S., reaching this level of market penetration faster than any other consumer electronics product ever. A number of industry members were able to come together to develop a standard, license the technology and create a wildly popular format for consumers, creating products that consumers would not have had access to without the underlying content protection.

The need for digital rights management has created an entirely new sector within the technology industry. Thus, while DRM is often portrayed as a battle between high-tech and Hollywood, in fact the two have a symbiotic relationship. Copyright owners are dependent upon the tech companies, including the ones before us today, for protection of their creations. Similarly, these tech companies have no reason for being, and thus no product to sell, without the copyright owners.

DRM technologies can also be implemented to limit the behavior of consumers. Consumers are understandably concerned about how DRM solutions may restrict their expectation to be able to make fair uses of copyrighted works. Admittedly, some consumers tend to confuse their expectation of allowed behavior with what is permissible under fair use, and thus these concerns may sometimes be overwrought. We need to educate these consumers why the legal limitations on the use of copyrighted works benefit consumers in the long run by incentivizing new creation.

However, we must also give serious consideration to how today's DRM protected products and services affect the fair use expectations of consumers. DRM technologies can facilitate pay per use schemes where copyright owners can charge consumers for almost any amount of content usage. A recent Cato Institute report by noted economics professor Stan Liebowitz concludes that a pay per use world will benefit consumers. Liebowitz theorizes that consumers would accept a model in which they pay for each use they wish to make of a work, so long as the payments reflect the specific value of that use.

I am curious to hear how new payment schemes may change traditional consumer expectations, and I hope our witnesses can address the relationship between their products, consumers' expectations and fair use.

But no DRM solution is 100 percent successful. Even the best DRM ultimately cannot stop a determined hacker. Unfortunately, DRM cannot protect content that is already available in the clear. That piracy, particularly the piracy taking place via file trading on peer-to-peer networks is an enormous problem, but it is separate from what we are discussing today. I hope, Mr. Chairman, that our Subcommittee can address the problems of peer-to-peer piracy in another hearing in the near future.

Although DRM solutions are not impenetrable, a DRM solution does not have to be fail-safe to be effective. If the DRM deters the average user from widespread piracy such as illegally sharing content on a peer-to-peer network, then that DRM is a major step forward to the goal of flexible, widespread legitimate access to copyrighted content online.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Berman follows:]

PREPARED STATEMENT OF THE HONORABLE HOWARD L. BERMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman,

Thank you for holding this hearing on digital rights management (DRM). Our purpose today is to learn about the plethora of new technologies that have been developed to provide consumers with access to protected, copyrighted works in both old and new formats. Our four witnesses represent an array of technology companies, each bringing a unique product or business model to the copyright community.

It is clear that consumer demand exists for digital copyrighted works, both online and off. Whether it is software applications, video games, photographs, needlepoint designs, television shows, movies, or music, it is apparent that consumers want digital copyrighted works.

Unfortunately, in the absence of legitimate services, the online demand is manifested largely through massive piracy. A recent report by Viant estimates that 400,000 to 600,000 pirate versions of movies are downloaded every day over the Internet. In April of 2002, 1.1 billion files were downloaded using just one of the peer-to-peer file trading services.

Legitimate services exist for software, newspapers, and to a certain extent, books. Legitimate services have also started to emerge in the music space, and are being developed for movies. While some of these services do not yet provide sufficient convenience and functionality to prove compelling to consumers, it is clear that the foundation of any legitimate service is digital rights management. Without it, few copyright owners would be willing to make the leap to digital online delivery of their content.

The DVD format is an instructive success story. The first DVD players were sold in the United States in 1997. In less than five years, over thirty million DVD players have been sold in the United States, reaching this level of market penetration faster than any other consumer electronics product ever. In 2001, consumers spent over six billion dollars on DVD rentals and sales. While the DVD is not digital rights management per se, it does represent a protected format for movie distribution. A number of industry members were able to come together to develop a standard, license the technology, and create a wildly popular format for consumers—creating products that consumers would not have had access to without the underlying content protection. With DVD, technology companies answered the need of both the copyright community and consumers to provide entertainment in digital form.

The internet provides another opportunity for copyright owners and technology companies to develop completely new products, business models, and methods of distributing content to the users who want it. There are a variety of delivery methods and payment models: downloads, streams, subscription services, time-limited "rentals," peer-to-peer trading, as well as burning to traditional physical media.

Our witnesses today are working to address needs in different content markets and with different delivery mechanisms. Their presence here is emblematic of an overarching point: the need for digital rights management has created an entirely new sector within the technology industry. Companies such as SunnComm, CenterSpan, Vidius, and ContentGuard did not exist a few years ago. Thus, while DRM is often portrayed as a battle between high-tech and Hollywood, in fact the two have a symbiotic relationship. Copyright owners are dependent upon the tech companies (including the ones before us today) for protection of their creations. Similarly, these tech companies have no reason for being—and thus no product to sell—without the copyright owners. I look forward to hearing about the diversity of DRM products that exist now and that are continuing to develop.

Learning more about the DRM technologies that exist or are being developed will enable us to better evaluate the policy implications of these technologies. In particular, this hearing will help us evaluate the effect of these technologies on consumers.

As a preliminary matter, it appears the effects of DRM technologies on consumers may be significant. Whether these effects are, on balance, beneficial or adverse is less clear. Furthermore, these DRM technologies cannot be analyzed in a void: their impact on consumers depends entirely on how they are implemented.

DRM solutions clearly give copyright owners more comfort in making their works broadly available in digital formats. To the extent that DRM technologies mean that consumers will have access to copyrighted works in new formats, such as DVDs, consumers are clearly benefited.

DRM technologies can also be implemented to limit the behavior of consumers. Consumers are understandably concerned about how DRM solutions may restrict their expectation to be able to make fair uses of copyrighted works. Admittedly, some consumers tend to confuse their expectation of allowed behavior with what is permissible under fair use, and thus these concerns may sometimes be overwrought. We need to educate these consumers as to the limits of fair use, and why the legal limitations on the use of copyrighted works benefit consumers in the long run by incentivizing new creation.

However, we must also give serious consideration to how today's DRM-protected products and services affect the fair use expectations of consumers. It has often been noted that DRM technologies facilitate pay-per-use schemes where copyright owners can charge consumers for almost any amount of content usage. There is no conclusive evidence as to whether such a "pay-per-use" world is good or bad for consumers. A recent Cato Institute report by noted economics professor Stan Liebowitz concludes that a pay-per-use world will benefit consumers. Liebowitz discusses the economic benefits of micropayments, theorizing that consumers would accept a model in which they pay for each use they wish to make of a work, so long as the payments reflected the specific value of that use. In many cases, such "perfect price discrimination" enabled by DRM technologies would significantly lower the cost to the consumer.

I am curious to hear how new payment schemes may change traditional consumer expectations, and I hope our witnesses can address the relationship between their products, consumers' expectations, and fair use.

No DRM solution is one-hundred percent successful. Even the best DRM ultimately cannot stop a determined hacker. Unfortunately, DRM cannot protect content that is already available in the clear. That piracy—particularly the piracy taking place via file-trading on peer-to-peer networks—is an enormous problem, but is separate from what we are discussing today. I hope, Mr. Chairman, that our subcommittee can address the problems of peer-to-peer piracy in another hearing in the near future.

Although DRM solutions are not impenetrable, many of today's DRMs are dynamic systems that have the ability to be upgraded when compromised, making it more difficult for a hacker to make a serious impact. More importantly, however, a DRM solution does not have to be fail-safe to be effective. If the DRM deters the average user from widespread piracy, such as illegally sharing content on a peer-to-peer network, then that DRM is a major step forward toward the goal of flexible, widespread, legitimate access to copyrighted content online.

Mr. COBLE. I thank the gentleman.

Did the gentlelady from California have an opening statement?

Ms. LOFGREN. I do, Mr. Chairman, and in the interest of time, I would ask unanimous consent to submit that statement for the record so that we can get to our witnesses.

Mr. COBLE. So ordered. I thank you for that.

[The prepared statement of Ms. Lofgren follows:]

PREPARED STATEMENT OF THE HONORABLE ZOE LOFGREN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Despite some perceptions, digital piracy is not a threat limited to the movie and music industries. Software developers lose money from theft rates exceeding eighty percent in some countries. Local and national economies lose jobs and tax revenues and lawful consumers confront higher prices. Faced with these realities, preventing digital piracy is a righteous goal.

But our national discussion must involve more than an examination of how to prevent illegal copying. As the title of this hearing indicates, consumers benefit from DRM solutions that secure content and encourage artists, publishers, record labels, studios and software developers to release their works in digital formats. But that is only part of the equation. Whether you call them rights or expectations, consumers have grown accustomed to certain uses. For example, since the advent of the VCR, consumers have been able to lawfully record their favorite television show. DRM technology will ultimately fail if it prevents this and other consumer expectations in the name of outdated business models.

Put simply, the rights of the copyright owner to control their work must be balanced with the rights of the consumer. Traditionally, copyright law has aspired to do just that. The great challenge today is to maintain that balance in the digital world by finding ways to prevent and punish digital pirates without treating every consumer as one.

Ultimately, it is the marketplace, not government, who will judge the best solution. Calls for government mandates are unrealistic amid the rapid pace of technological innovation. Nor is it realistic to expect one DRM solution to fit the multiple platforms and devices that exist. Instead of mandating regulations that will be outdated when published, government should encourage the marketplace to seek out DRM technologies that are strong enough to protect content and flexible enough to preserve the performance and functionality of underlying hardware and software.

I look forward to hearing today about some of the DRM solutions that currently exist. I am especially interested in hearing how content providers have been utilizing existing DRM technologies. I am concerned that some in the content industry expect the weight of preventing digital piracy to be shouldered disproportionately by hardware and software manufacturers. While technological protections have a role to play, content providers must also lead by preventing piracy at its source. Indeed, pirates somehow obtained an illegal copy of Spiderman before selling it prior to its theatrical release. Finally, I am most interested in hearing how DRM solutions will respect the rights and expectations of consumers, who are the ultimate arbiters of DRM technology.

Mr. COBLE. The gentleman from Virginia.

Mr. BOUCHER. Well, thank you very much, Mr. Chairman. I have a very brief statement. I want to begin by commending the Chairman and the Ranking Member of the Subcommittee for convening today's hearing to learn about the state of the development of digital rights management technologies and to examine possible Federal policy implications that stem from that development. A balance in the law is necessary. It is perfectly appropriate, in my view, for content owners to use digital rights management solutions to prevent, for example, the wholesale unauthorized redistribution of material that is copyrighted across the Internet.

At the same time, in my opinion, it is essential that consumers who lawfully acquire digital media continue to have both the right and the easy ability to make copies of that material for their own noncommercial use, convenience and enjoyment. They should also have the ability to transfer the content they have lawfully acquired among digital devices in the home and in the extended home environment, including the car and the office and perhaps the place where they go to spend the weekend. Consumers will understand and accept technologies that impose limits on the commercial use of material or on the mass distribution of material to others, but consumers, in my view, will not accept and will not respect access or copy controls that do not allow them to do in the digital world what they have been accustomed to doing under historically respected fair use rights and principles in the analog world.

This is the balance which we have to strike. Getting to that balance I think is going to be a challenge, and I hope that the witnesses today will suggest to us possible avenues by which we might achieve it.

Thank you very much, Mr. Chairman.

Mr. COBLE. I thank the gentleman. We are pleased to have a very fine panel of witnesses today. Our first witness is Mr. Will Poole, who serves as Vice President at Microsoft and heads the company's recently formed New Media Platforms Division. This division comprises three fast-moving areas of the company's Windows operating system business, the Digital Media Division, the eHome Division and the Content Security and Business Unit.

During the past 5 years, Mr. Poole has been instrumental in developing Microsoft's platform strategy for new media, including streaming media and digital rights management. In this capacity, he worked to bring to the marketplace technology innovation with a solid consumer focus.

Prior to joining Microsoft in 1996 with the acquisition of eShop Inc., which he cofounded, Mr. Poole spent 5 years in senior engineering and management roles at Sun Microsystems. Mr. Poole holds a Bachelor's Degree in computer science from Brown University.

And I am told that Mr. Alexander is a constituent of the gentlelady from California, and I would like to ask Zoe if she would introduce Mr. Alexander.

Ms. LOFGREN. Thank you, Mr. Chairman. James Alexander serves as the Director of eBooks at Adobe Systems, where he is responsible for the eBooks Business Unit. Prior to joining Adobe, he founded and worked for several start-up software companies, including Mibrary, a company intended to make eBooks and other digital content easier for consumers to use. He is a veteran software executive with more than 10 years experience in assembling and mobilizing world-class teams around technology-driven products.

Prior to Mibrary, in 1994 he cofounded eWatch, an application service provider used by more than 800 blue chip companies to track what is being said about their brands online.

He is an active member of several trade associations, including the Association of American Publishers, the Enabling Technologies Committee and he is also on the advisory committee of something important to all of us in San Jose, which is the One Book, One Community event that we are trying to put together.

He received his Bachelor's of Arts in political science from Rockefeller College, the University of Albany State, University of New York in 1991, and he is joined by a lot of other friends and some of my neighbors from Adobe here today. So I look toward to hearing his testimony, and I thank you, Mr. Chairman.

Mr. COBLE. I thank the gentlelady. Mr. Alexander and Mr. Poole, good to have you both with us.

Mr. Jacobs is our third witness. Mr. Peter H. Jacobs, who is President and Chief Executive Officer at SunnComm, Inc. He offers more than 20 years experience in the telecommunications and computer technology industries. Mr. Jacobs has guided the development of SunnComm's digital content enhancement and security technology. As a result of his efforts, SunnComm has developed a software system and functions as a protective agent for digital media.

Prior to joining SunnComm, Mr. Jacobs founded, owned and managed a variety of technology businesses. He served as President of Fone America, a nationwide telecommunications carrier for many years, where among other achievements he was instrumental for the conception and rollout of a then brand new concept in communications called prepaid calling card on telecard. In addition, he served at Stellar Vision International, which in 1981 pioneered pay per view movies, satellite television and movies in hotels. He has also been involved in a range of other businesses, including low power television stations in California and Oregon, and was the founder of Cigar America, an online cigar distributor.

Mr. Jacobs has authored and published a book on satellite television for nontechnical readers, entitled *Everything You Wanted to Know About Satellite Television*.

He spent his earlier years as an on-air radio personality and music director and has produced dozens of live concerts through his own production company. Mr. Jacobs studied sociology and political science at the University of Oregon. And Mr. Jacobs, you will be pleased to know that I am a consumer of cigars. I don't inhale, however.

Our final witness today is Mr. Frank G. Hausmann, chairman and chief executive officer of CenterSpan Communications Corporation. Before his current role as CenterSpan's CEO, Mr. Hausmann served as an executive for a variety of high technology and computer media companies, including Atlas Telecom, Diamond Multimedia Systems and Supra Corporation. Prior to joining Supra, Mr. Hausmann had spent 10 years as a consultant with PriceWaterhouseCoopers and practiced law with Stoel Rives.

Mr. Hausmann holds BS Degrees in economics and political science from Willamette University and a JD Degree from the University of Oregon. He is a member of the Oregon State Bar. The gentleman—I think it was just by happenstance that we have two members of the State of roses, rivers, rodeos and rain, where I spent some time with the Coast Guard many years ago. A very fine State. Good to have you all with us.

We have been joined by the Ranking Member of the full Committee, Mr. Conyers of Michigan, who has asked to make an opening statement.

Mr. CONYERS. Thank you, Chairman Coble, and Members of the Committee. We all welcome our witnesses. There is no doubt that this is an important hearing, because entertainment, the movies, music is all, or are all our most successful exported product. And for decades we have led the world in the production and enjoyment of so many of the American arts, but in the Internet age we have had a problem that Attorney Ted Kalo has called virtual shoplifting. You can write that down. It is a patented term. Virtual shoplifting, which is known as piracy.

Consider what has happened. CD sales have fallen in the last year. The sale of blank CDs now exceeds the sale of recorded CDs, and the private ownership of CD burners have tripled and are now 42 percent larger than their sales in 1999. The movies? Well, Star Wars II was on the Internet for free before it was in the theaters.

So what we are saying is that the whole network of ownership rights, patents, trademarks, copyrights are being challenged by a cultural situation in which many people—and all of them are not young people—are beginning to think that anything that can be taken off the Internet is free.

What is the problem, Congress? That is the way we have always done it. The new generation doesn't know any other way. And so we come here today in the midst of several different kinds of proposals to examine what may be the best way to preserve and protect our intellectual property.

We are delighted to have the witnesses. The Chairman of the full Committee, Jim Sensenbrenner, and I and Mr. Berman and Mr. Coble have held ourselves out to hold discussions with the various groups in hopes that we can get over the hurdles of differences to come to a conclusion as soon as we can, and I thank you for letting me make this intervention, Mr. Chairman.

Mr. COBLE. You are indeed welcome, and we have been joined by the gentleman from the Roanoke Valley in Virginia, who I believe said has no opening statement.

Mr. GOODLATTE. Not at this time, sir.

Mr. COBLE. Good to have you with us, Bob.

Gentleman, best laid plans of mice and men you know ofttimes go awry, and I am told that the scheduled floor vote will likely occur in about 20 minutes. If you all will try to comply with our 5-minute rule. When you see that red light illuminate in your face, you will know that 5 minutes have elapsed. And we have your written testimony, and we will go over it again, but we will start with Mr. Poole.

STATEMENT OF WILL POOLE, VICE PRESIDENT, WINDOWS NEW MEDIA PLATFORMS DIVISION, MICROSOFT CORPORATION

Mr. POOLE. Mr. Chairman, Members of the Subcommittee, I appreciate this opportunity to present Microsoft's views on the consumer benefits of Digital Rights Management, or DRM. We all have a profound opportunity to shape and grow the digital economy. Part of Microsoft's contribution is our commitment to developing DRM solutions that protect content and personal privacy while expanding consumer choice, creating new business opportunities and promoting innovation.

Microsoft brings a balanced perspective on DRM technologies, because we are both a user of DRM solutions to protect our own content, our software, and we are also a developer of tools for our partners and customers. Microsoft's flagship DRM technology is Windows Media Rights Manager, which lets content owners deliver music and video online in a cryptographically secure format. Rights Manager has been deployed on a worldwide basis for about 3 years as part of Windows and is an extremely flexible solution, one that supports a broad array of business models needed to manage our customers' content assets.

Hundreds of companies have partnered with Microsoft to deploy Windows Media Rights Manager. For example, Intertainer uses Windows Media technologies to offer a secure online video on demand service. Intertainer subscribers can use DSL or cable Internet connections to access premium content from Universal Pictures, MGM, Warner Brothers and other leading film studios. Likewise, CinemaNow uses a Windows Media-based solution to securely distribute nearly 2 million video streams per month from their library of licensed feature films.

In working with our partners and customers, Microsoft has come to realize that the need to protect content, or more precisely digital assets, is one that extends far beyond movies and music. A diverse range of industries and users, such as banks, lawyers, doctors and many others, today generate additional assets and often have a compelling need to protect these assets against public disclosure, misuse or theft.

For this reason, Microsoft takes into account three broad types of digital assets when we design our DRM technologies: First, personal information, such as medical and financial data; second, corporate information, such as legal and business documents; and, third, commercial content, such as movies, music and software.

Each type of asset has its own unique security requirements. An attorney's confidential memo, a home video and a studio's new blockbuster film, each may require DRM protection. Yet the ways in which these assets are distributed and used and the types of misuse to which they are most susceptible will vary greatly.

Fortunately, the private sector has made tremendous progress in improving the quality of DRM technologies, many of which have already garnered broad consumer acceptance. Microsoft alone has invested over $200 million in DRM research and development to date. Companies throughout the economy are investing hundreds of millions more in their own DRM technologies.

As more people become creators of content for both personal and commercial purposes, the need for securing it becomes increasingly critical. Industry needs to work harder at informing consumers about the central role that intellectual property plays in their lives. We must ensure that consumers have the ability to easily manage their digital assets and to also make effective use of commercial content that is secured by DRM.

To date, discussions around the need for DRM-related legislation have focused primarily on commercial content, specifically filmed entertainment. As we shift our focus to the future, we must pay attention to the DRM requirements of all three types of digital assets, and the needs of one industry do not overshadow the needs of other industries or, more importantly, the needs of consumers.

Regulatory action, if any, will be most effective where it does not dampen private sector incentives for innovation. Broadly mandated use of specific DRM technologies in order to address the concerns of a single industry will be particularly inappropriate. Such mandates would prevent companies from developing new technologies that effectively respond to rapidly changing technologies and hacker attacks.

Imposing broad technical measures simply to address a specific issue, such as seeking to protect analog video content that has been converted to digital formats, would stifle innovation and certainly result in higher consumer costs with few, if any, corresponding benefits. The ultimate victims of such regulatory mandates would be the American public, who would enjoy fewer options in new technologies and would be restricted in managing their own digital assets.

In closing, Microsoft would like to thank this Subcommittee for its demonstrated interest in promoting consumer access to digitally distributed content through new technologies and for recognizing the important role DRM solutions will play in this area. We urge you to continue to promote progress by encouraging private sector solutions to the challenges ahead.

[The prepared statement of Mr. Poole follows:]

PREPARED STATEMENT OF WILL POOLE

Mr. Chairman and members of the Subcommittee, my name is Will Poole, and I am Corporate Vice President in charge of Microsoft's New Media Platforms Division. I am grateful for the opportunity to appear before you today to present Microsoft's views on the consumer benefits of digital rights management (DRM) technologies.

Microsoft is deeply committed to developing DRM solutions that protect content and personal privacy while expanding consumer choice, creating new opportunities for businesses, and promoting innovation. In designing our DRM technologies, we take into account three broad types of digital content—personal information (such as individual medical and financial data), corporate information (such as legal and business documents), and commercial content (such as movies and music)—each with its own unique requirements for secure distribution and management. To date, discussions around the need for DRM-related legislation have focused primarily on commercial content, and there specifically about filmed entertainment. As we shift our focus to the future, it is critical that we pay attention to the DRM requirements of all types of digital content and that the needs of one industry do not supercede or usurp the needs of others.

Powerful, flexible DRM solutions are critical to maintaining the security and value of a wide variety of content through the digital ecosystem, not just movies and music. Without a broad range of DRM tools, digital piracy will flourish, users will be reluctant to distribute sensitive information digitally, and the creation of new business models based on digital distribution will falter. The ultimate victims of limited DRM options will be consumers, who will enjoy fewer opportunities to enjoy the many benefits of digitally distributed commercial content, or manage their own digital information securely, easily and inexpensively.

In recent years, the private sector has devoted substantial resources to—and has made tremendous progress in—improving the quality and breadth of DRM technologies. Industry has strong incentives to develop innovative and flexible DRM technologies that can respond quickly to changing circumstances, and that can support diverse business models to satisfy varying consumer scenarios. Contrary to some claims, our industry has already been remarkably successful—through the actions of both individual firms and multi-industry initiatives—in developing effective, user-friendly DRM technologies, many of which have already garnered broad consumer acceptance. As these technologies mature, more and more businesses are discovering new applications for—and taking advantage of new business opportunities enabled with—DRM systems.

The title of today's hearing recognizes that DRM technologies can benefit consumers. Microsoft acknowledges, however, that industry needs to do a better job of educating the public about their benefits. The problems that arise from unprotected digital content extend well beyond pirated movies and music and negatively affect the entire digital economy. As more people become creators of digital goods and information for both personal and commercial purposes, the need for securing this IP becomes increasingly critical. We in industry need to work harder at informing consumers about the central role IP plays in their lives, the rights they have in their own works, and the value it may represent to them.

Microsoft thanks the Subcommittee for its demonstrated interest in promoting consumer access to works through new technologies and for recognizing the important role DRM solutions will play in this area. We urge you to continue to promote progress toward a vibrant Internet marketplace by encouraging private-sector solutions to the challenges that achieving this goal may present. We also believe that regulatory action, if any, will be most effective where it does not dampen private-sector incentives for innovation, restrict competition, or make it more difficult or costly for industry to respond to DRM circumventions by hackers. Broad regulatory mandates prompted by industry-specific concerns are particularly ill suited to the growing diversity of digital content, as well as emerging and changing industry needs and consumer expectations in this area.

The balance of this testimony explains these themes in greater detail and describes some of the ways in which Microsoft and our partners in the technology, consumer electronics, and entertainment industries are working to advance the development and deployment of state-of-the-art DRM solutions.

I. MICROSOFT AND DRM TECHNOLOGIES

The phrase "digital rights management" commonly refers to technical measures that help companies and individuals manage their rights in digital content. In practice, the term is often applied broadly to almost any security measure that protects digital content, including access and copy control mechanisms.

Microsoft is involved with DRM technologies in two distinct aspects of its business: As a user of DRM solutions to protect our own content; and as a developer of DRM tools for our partners and customers.

As a leading software developer, Microsoft is also one of the world's largest IP-based businesses. Simply put, we generate the bulk of our revenue by developing and licensing IP to our customers. Like most software developers, however, Microsoft suffers significant revenue losses from piracy. The worldwide software piracy rate currently stands at 37 percent, meaning that more than one in every three copies of software in use today is used without a legal license.[1] The software industry loses more than $11 billion annually due to piracy.[2] Software piracy also impacts the broader economy: According to the Business Software Alliance, software piracy in 1998 resulted in over 100,000 lost jobs and nearly a billion dollars in lost income tax revenues in the United States alone.[3] If software piracy remains unabated, it will cost the U.S. economy over 175,000 jobs and $1.6 billion in lost income tax revenues by 2008.[4]

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[1] *See* International Planning and Research Corp., *Sixth Annual BSA Global Software Piracy Study* (2001), p. 1, at *http://www.bsa.org/resources/2001-05-21.55.pdf* (downloaded May 27, 2002).

[2] *Id.*

[3] *See* Business Software Alliance, *Forecasting a Robust Future: An Economic Study of the U.S. Software Industry* (1999), pp. 24–25, at *http://www.bsa.org/usa/globallib/econ/us—econ—study99f.pdf* (downloaded May 27, 2002).

Microsoft has always believed that as a content owner, we bear primary responsibility for protecting our own products. Accordingly, we began experimenting with technical protections for our software as early as the mid-1980s. Some of our initial efforts at technical protection were judged by the marketplace to be too unwieldy, and they frankly alienated some of our customers. Microsoft responded by developing more user-friendly mechanisms that responded to consumer needs. As a result of these efforts, we have learned a great deal about the possibilities and limitations of DRM systems—both in terms of what is technically feasible, and in terms of consumer expectations. We have also learned that no DRM system, no matter how secure, will succeed *in the marketplace* unless it meets the needs of consumers in an un-intrusive, cost-effective manner.

Microsoft is also a leading developer of DRM solutions for use by third parties. From the beginning, Microsoft's core business has been developing software tools that help our partners and customers unlock the full power and potential of personal computers. These tools have sparked rapid innovations throughout the digital ecosystem while helping people become more productive and exploit new avenues for communication and recreation.

In working to understand the specific DRM requirements of our partners and customers, Microsoft has come to realize that the need to protect content—or more precisely, "digital assets"—is one that extends far beyond the film and recording industries. An extremely diverse range of industries and users—such as financial service providers, the medical and healthcare industries, legal service providers, various government agencies, as well as large and small businesses across countless other sectors of the economy—today generate digital assets as a core part of their business and often have a compelling need to protect these assets against public disclosure, misuse, or theft.

And equally importantly, many consumers generate their own digital content—ranging from financial records to photographs to their individual medical histories—which they rightfully desire to ensure can be used only in accordance with their wishes. Safeguarding such private aspects of consumers' lives is an increasingly vexing problem in a digitally connected world. DRM technologies offer the hope of protecting consumers' privacy and opening new avenues for the securely managed use of personal information.

At the same time, the specific digital assets to which DRM technologies may be applied differ tremendously in terms of their characteristics and use, the business models within which they are used and distributed, and the expectations with which consumers approach these assets. An attorney's confidential client memo, a recording company's master audio recording, a government's tax records, an amateur photographer's images, and a publisher's new bestseller may each require DRM protection. At the same time, the ways in which these digital assets are distributed and used—and the types of misuse to which they are most susceptible—will vary enormously. To ensure that the efficiencies of digital distribution can be exploited throughout the economy, it is essential that users have access to sufficiently flexible DRM tools to meet their specific needs.

II. DRM TECHNOLOGIES—THE PRIVATE SECTOR IN ACTION

The ultimate success of DRM systems within the broader digital environment will depend not only on the strength of their security, but also on their ease of use, applicability to multiple types of content, ability to integrate easily with existing industry systems, support for flexible business models, and their ability to recover from a hack or compromise. Despite occasional claims to the contrary, the private sector has made enormous progress in developing DRM solutions that meet these goals. Examples include Conditional Access systems used by hundreds of millions of cable and satellite customers worldwide, copy protection systems employed on every DVD player, and software DRM solutions that are available in hundreds of millions of computers.

For its part, Microsoft strives to develop powerful, flexible and consumer-friendly DRM tools, and we work closely with a wide range of industry partners to deploy these DRM systems in valuable and innovative ways. We also actively participate in several cross-industry initiatives to develop broad-based DRM solutions.

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[4] *Id.*

A. Microsoft DRM tools

Microsoft's flagship DRM technology is Windows Media Rights Manager, an end-to-end DRM solution that lets content owners deliver music, video, and other media content online in a secure format. Rights Manager gives content owners the ability to determine a wide range of delivery options, including start and expiration times; the number of times a file can be played; whether a file can be burned onto a CD; and whether the file may be copied onto a portable player or other device. In this way, Rights Manager supports a broad array of content distribution business models, such as previews, rentals, subscription, purchase, try-before-you-buy, and other models—all of which are employed under the control of the content owner/distributor.

Companies around the world have partnered with Microsoft to deploy Windows Media Rights Manager in their own businesses, making it the most widely used technology for securely distributing digital media online. First launched in 1999 and now in its second generation, Windows Media Rights Manager has been used in over 11 million transactions for secure video and audio and is supported on over 350 million media players. Over 275 companies have licensed Rights Manager to create secure online distribution systems, more than 130 software developers have licensed Rights Manager to support playback of secure audio and video, and over 60 devices are currently on the market that support Windows Media. All of the major music labels have used Rights Manager to deliver digital music online, and Microsoft has partnered with several companies that now offer top-quality online audio and video subscription services based on Rights Manager.

One of these Microsoft partners is Intertainer, which uses Windows Media technology to offer a secure online video-on-demand (VOD) service. The Intertainer service allows subscribers to access premium content from Universal Pictures, MGM, Warner Bros., and other leading film studios at VHS quality over common DSL and cable modem connections. Pressplay, the leading music subscription service created by Universal Music and Sony Music, uses Microsoft's technologies to offer convenient and secure music downloads. Likewise, CinemaNow uses a customized Windows Media-based VOD content distribution and management system to securely deliver nearly 2 million video streams per month. These are just three of dozens of companies that are successfully using DRM technologies from Microsoft, IBM, and others to provide consumers with easy, inexpensive online access to the very best entertainment content. That said, the adoption of powerful and flexible DRM technologies already on the market has been surprisingly slow in some major content sectors—a factor that has arguably fueled the growth of digital piracy over some peer-to-peer networks and other channels.

Microsoft also offers a DRM solution for the secure distribution of eBooks. Launched in August 2000, Microsoft's eBooks DRM is used by more than 20 eBookstores worldwide. Several leading publishers and online booksellers—including BarnesandNoble.com—have selected Microsoft's eBooks DRM and Microsoft Reader as their preferred eBooks platform.

In addition to music, film, and books, Microsoft also uses its DRM technologies to protect our own most valuable assets: Windows and Office. Both product lines now use "activation" technology to reduce piracy, which is particularly crucial in overseas markets where copyright laws are less well understood and enforced. Tens of millions of our customers have successfully installed and used the latest versions of Windows and Office, illustrating that DRM technologies can be applied to mass-market digital products in a way that reasonably balances the needs of copyright holders and end users.

Despite our successes to date, we still have much work to do in this dynamic technology area. We have invested over $200 million to date in these areas, and have substantial ongoing efforts—possibly the most extensive DRM research and development investments in the industry. We are currently working on the next generation of DRM that will protect an extremely broad range of personal and commercial digital assets in a secure environment that provides a seamless and rich consumer experience.

B. Cross-industry initiatives

In addition to our in-house DRM development efforts and our collaborative work with partners, Microsoft actively participates in several standards organizations and other cross-industry initiatives. While some of these standards bodies—such as the World Wide Web Consortium (W3) and the Internet Engineering Task Force (IETF)—have not yet taken up the issue of DRM interoperability, a handful of cross-industry initiatives are making important contributions to this effort.

One such organization is the Moving Picture Experts Group (MPEG), a working group of the International Standards Organization charged with developing standards for digital audio and video. Since its launch in 1988, MPEG has produced MPEG–1, the standard on which Video CD and MP3 are based, MPEG–2, the standard on which DVDs and digital TV set-top boxes are based, and several others.

Among the technologies that MPEG is evaluating for standardization is XrML, a "meta-language" for specifying rights that will greatly enhance DRM interoperability. XrML, which was invented at Xerox Palo Alto Research Center (PARC) over ten years ago and submitted to MPEG by ContentGuard, provides a universal method for securely specifying and managing rights associated with all kinds of digital content and services.[5] The goal of XrML is to provide a flexible, extensible, and interoperable standard that meets everyone's needs regardless of industry, platform, format, media type, or business model.[6] Microsoft is a strong proponent of interoperability standards for DRM, and we see great potential in XrML in particular.

Microsoft is also a member of the Copy Protection Technical Working Group (CPTWG), a cross-industry group launched in 1996 that includes representatives from the PC industry, the consumer electronics industry, and the major film studios. In 1998, the CPTWG helped to facilitate creation of the Content Scramble System (CSS) technology that is now used by every major U.S. film studio to protect DVDs against unauthorized copying.

C. DRM solutions—a diverse range of options

All told, industry has invested hundreds of millions of dollars into developing an array of powerful, flexible and user-friendly DRM solutions. This broad range of options is both valuable and necessary, for no single technology or solution can possibly fulfill the remarkably diverse requirements of the digital marketplace.

Each of the major DRM technologies in use today has its unique strengths and will be more or less useful depending on the context. For instance, some content owners favor hardware-based DRM systems because the protection mechanism is embedded within the hardware itself. Examples of hardware-based DRM solutions include DirectTV smartcards and many cable conditional access systems. The CSS technology used to protect DVDs, by comparison, is an example of a hybrid software/hardware protection mechanism. With CSS, DVD players are programmed to inspect DVDs for an embedded code, which interacts with the hardware to determine whether the user may play or copy the DVD content. Although hardware-based and hybrid systems are widely used, once the protection mechanism is compromised, they are typically lost forever and cannot be renewed. Because any DRM system is vulnerable to attack at some level—as demonstrated by the widely publicized hacks of DVDs—this can be a significant drawback.

One of the primary advantages of software-based DRM such as Windows Media Rights Manager, by contrast, is its built-in renewability. Like most content protection technologies, Rights Manager uses encryption to prevent unauthorized access to digital content. In the event this protection is compromised, however, Rights Manager gives content owners the ability to isolate the intrusion by dynamically renewing the protections that apply to all other copies of that content. This feature of dynamic renewability enables content owners to respond quickly to security breaches and thereby to stay one step ahead of hackers.

There has also been some discussion of the role of digital watermarks. Although watermarks can play a role in an end-to-end DRM solution (indeed, Microsoft is investing key research efforts in new watermark techniques), watermarks alone do not protect content and in Microsoft's judgment cannot be used to solve the "analog hole" problem described further below. Moreover, watermarks vary in how and where they might be used—for instance, audio is different than video—and each has it own technical challenges. Watermarks could be useful in forensic investigations to help track down sources of piracy leaks, as watermarks can carry specific information identifying the means of content distribution. However, because watermarks by definition do not affect the appearance or sound of watermarked content, they are susceptible to removal by hackers without significant damage to the content. Attempts to build after-the-fact protection or enforcement schemes around video watermark detection have many problems and in our view are unlikely to succeed.

We believe that renewable, robust DRM encryption provides the best mechanism for actually protecting digital content and reducing piracy while also securing digital privacy. Accordingly, all of Microsoft's DRM tools are based upon a foundation of content security through encryption.

At the end of the day, content owners themselves must determine what type of DRM is best suited for their particular needs. Fortunately, the marketplace already provides an array of flexible DRM solutions that meet a broad range of user requirements, cost constraints, and business models. Microsoft strongly supports this process and pledges to continue to do its part to promote innovation in the development and rapid deployment of DRM technologies.

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[5] *See* XrML.org, *About XrML*, at *http://www.xrml.org/About.asp* (downloaded May 31, 2002).

[6] *See* XrML.org, *Frequently Asked Questions*, at *http://www.xrml.org/faq.asp* (downloaded May 31, 2002).

D. Additional areas in which DRM may play a role

As the preceding overview illustrates, the private sector has actively responded to the market demand for powerful, flexible DRM technologies, and content owners can now choose from a broad range of innovative, consumer-friendly DRM solutions. The MPAA and several studios have highlighted three particular areas of importance to their specific businesses, discrete issues in which they believe DRM technologies may also play a role. These areas are unencrypted digital TV broadcasts, the so-called "analog hole," and P2P piracy. Microsoft is actively engaged in working toward a solution in each of these areas.

Unencrypted digital TV broadcasts. At present, available DRM technologies can protect four of the five channels through which digital content is most commonly distributed: cable, DSL, satellite, and physical media (such as CDs and DVDs). The only digital distribution channel that existing DRM technologies are not available to protect is that small fraction of digital content that enters the home through unencrypted over-the-air digital TV broadcasts. Because FCC regulations require this programming to be broadcast in the clear, viewers currently have the ability to make copies of this programming (using, for example, a VCR or DVD burner). The concern is that some viewers may then unlawfully redistribute these copies to the public at large. Because this programming can feasibly be made secure only after it reaches the consumer's television but before it is redistributed, developing an easy-to-use, cost-effective DRM solution to such unlawful redistribution has proven to be challenging.

This issue is currently being explored by the Broadcast Protection Discussion Group (BPDG), a subgroup of the CPTWG. Microsoft is actively involved in the BPDG and believes that discussions within the BPDG have been constructive in helping to clarify the requirements and needs of the various stakeholders. We however share the concerns expressed by many of those participating in the process about the rigor with which the process has been driven and by which technology is evaluated in this forum. Particularly, we believe all stakeholders are best served by a process that is transparent, that employs evaluation criteria that are fair, objective, and clearly stated, and that ensures that such criteria are openly published to enable any company that wishes to create products for receiving digital TV signals to obtain and study the applicable technical requirements. We do not believe any single technology should be "selected" or "mandated" by this process. We also look forward to advancing these discussions in a forum in which final decisions can be made and requirements defined and promulgated, as these are beyond the scope of the BPDG charter. Finally, we feel it would be regrettable if the multi-industry progress that has been made on this issue were prejudiced in favor of a process that did not reflect true industry-wide support.

The "analog hole." Virtually all DRM solutions can protect digital content only so long as that content remains in digital form. If the content is converted to analog form—or is originally broadcast in analog form—any protection that has been applied to that content is usually lost. Although the ability of digital devices to support analog conversion has legitimate, pro-consumer rationales, such as the playback of a digital camcorder tape on a standard television, the loss of content protection that this conversion entails means that such devices might also facilitate piracy.

Achieving a balanced approach to the analog hole has no easy, short-term solution. Millions of consumers already own at least one, and often many, digital devices with analog inputs and outputs, and tens of thousands more of these devices are being sold every day around the world. Virtually any existing device can be used to create unprotected analog or digital copies of content. And given that current TVs are likely to last for another 10 years or longer, even if a watermark or other DRM technology were incorporated into new TVs, it would not address the analog hole for the hundreds of millions of TVs and camcorders already on store shelves and in consumers' homes worldwide. Moreover, the use of watermarks may also present problems in terms of usability, product cost, battery life, etc. Perhaps most importantly, once a watermarking scheme is reverse-engineered, a non-compliant device or software can play content without heeding any information in watermarks.

Nevertheless, Microsoft remains firmly committed to working with all relevant stakeholders in devising an effective means to protect future generations of content so that it can be distributed and displayed in secure digital formats all the way from Hollywood to consumers' living rooms.

P2P piracy. Peer-to-peer (P2P) networking offers tremendous potential for the future of an online digital economy. Beyond the many efficiencies that P2P architectures can provide for the distribution of digital goods, the self-selecting nature of many P2P networks offers immense opportunities for business to quickly and inexpensively identify and exploit discrete consumer markets with great precision. In essence, participants in a P2P network self-select around some common interest. Commercial entities, not-for-profit organizations, and many other types of organizations expend enormous resources trying to identify and communicate with people that share an interest in what they offer. P2P networks represent an opportunity to most efficiently bring these groups together.

It is equally clear, however, that certain P2P networks can also be misused to facilitate piracy. Microsoft has first-hand experience of this unfortunate fact: Illegal copies of Microsoft products are commonplace on some P2P networks, and their number is likely to grow as broadband's reach expands. The challenge for industry is to steer otherwise lawful consumers away from these pirate P2P networks and towards legitimate online services and distribution channels.

DRM technologies may provide at least part of the answer to this challenge. For instance, this Subcommittee will hear today from CenterSpan Communications, which has successfully embedded the Windows Media DRM architecture onto its P2P-based Scour network. Scour's DRM solution preserves the strengths of the basic P2P computing architecture while ensuring that content owners who offer their works on the Scour network can maintain the security and integrity of their works.

Nevertheless, DRM technologies alone cannot solve the piracy problem. As Microsoft and others in the industry learned from their technical protection efforts in the 1980s, using DRM protections as an anti-piracy club, without adequate regard for consumer convenience and expectations, risks alienating lawful consumers and impeding the growth of legitimate distribution channels. Instead, content owners must combine the effective use of DRM tools with new business models that give consumers realistic and attractive alternatives to piracy. Digital distribution mechanisms and P2P networks have tremendous operational cost advantages, which—if combined with high-volume availability, top-tier content and easy access for consumers at appropriate price points—are just as important to combating piracy as technological solutions. In short, if it is roughly as easy for people to buy something legitimately as to obtain it illegally, most people will opt for the legal alternative.

III. CONCLUSION

DRM solutions will play an increasingly central role in securing all forms of digital assets, both those that are intended to be distributed to mass audiences and those that are intended to remain private with their creator. Microsoft is fully committed to developing powerful, flexible DRM technologies that protect both content and personal privacy while promoting innovation, opportunity, and consumer interests. The private sector has made great progress in providing a diverse array of highly effective DRM solutions—solutions that many companies already use to offer secure, high-quality content over digital distribution channels. The primary beneficiaries of these technologies, however, are consumers who receive more convenient options, a greater variety of high-quality content, and improved personal privacy.

We at Microsoft recognize that industry needs to work harder at educating the public about the uses and benefits of DRM technologies, and about the importance of IP protection in their own lives. We appreciate the leadership this Subcommittee has demonstrated in this area and the value that its oversight provides in keeping industry focused on the broader social and economic importance of DRM technologies. We encourage this Subcommittee to continue its efforts to promote private-sector solutions. Finally, we believe that regulatory action, if any, will be most effective where it promotes continued market innovation and competition, and does not focus solely on the needs of any one of the increasingly interdependent technology, consumer electronics, and entertainment industries.

Mr. COBLE. Thank you, Mr. Poole.

Mr. Alexander.

STATEMENT OF JAMES ALEXANDER, DIRECTOR, eBOOKS PUBLISHING ADOBE SYSTEMS, INC.

Mr. ALEXANDER. Good afternoon, Mr. Chairman. My name is James Alexander, and I am the Director of eBooks at Adobe Systems. I appreciate very much your gracious invitation——

Mr. COBLE. Pull that mike a little closer to you, Mr. Alexander. Thank you.

Mr. ALEXANDER. Good afternoon, Mr. Chairman. My name is James Alexander, and I am the Director of eBooks at Adobe Systems, and we appreciate very much your gracious invitation to provide testimony today on Digital Rights Management and eBooks. An eBook is shorthand for an electronic book. Unlike traditional print books, eBooks can be purchased online and downloaded instantly to a variety of electronic reading devices.

In the case of Adobe PDF eBooks, there are more than 300 retailers who sell eBooks in our format. In the case of eBooks publishers specify what value-added features they sell to consumers. For Adobe PDF eBooks today, I am talking about the ability to print, copy selections, expiring documents, lending, giving and text-to-speech. These rights are what Digital Rights Management is about, and that is why we are meeting today.

Some seem to believe that there is an inevitable trade-off between strong protections for intellectual property and the ability for consumers to exercise their traditional rights when they purchase or license creative content. In the case of consumer eBooks, this is a false statement. Put another way, when a publisher puts their books in Adobe PDF eBook format, they are trusting our technology to protect their valuable content against piracy. When a consumer buys an eBook, they are buying rights from a publisher. What rights a consumer can buy and at what price depend on what the publisher is willing to sell and what the consumer is willing to pay. Only by delivering strong cyber armor will authors and publishers feel confident making their works available electronically using Adobe's technologies, and only if publishers deliver a quality reading experience, which may mean including some of the uses consumers have grown to expect, will consumers embrace eBooks in a meaningful way. In either case we believe it is the market that should determine which eBooks technologies and which eBooks are successful.

So first let me address the piracy issue. As a member of the leadership team of a software company, no one is more aware of the dangers of piracy than I am. If one applies the worldwide piracy rate to my company's annual sales, software piracy costs Adobe more than $600 million annually. Publishers and authors are aware of this massive software piracy problem, not to mention the experiences of the recording and motion picture companies with peer-to-peer piracy.

Book publishers are understandably united in the demand that Adobe be vigilant about its eBook security technology. By granting a legal shield to tactical measures that protect copyrighted works, Congress has encouraged technical innovation and the development of a brand new market called eBooks that would not exist without these protections granted by the DMCA.

Let me be clear, Adobe believes that Congress struck the right balance in the DMCA. An eBook is a kind of vault for digital content, and Congress wisely chose to outlaw the digital lock picks that otherwise would have enabled piracy on a mass scale.

So let us talk about what consumers want. First and foremost, consumers want high quality content. In case after case, these are the best selling eBooks, regardless of functionality. But functionality is also important, and our industry's first efforts at electronic books frankly fell short of the mark.

With that said, there is an important distinction between not having the functionality at all and having it but not selling the rights to it. More than a year ago, Adobe acquired a Boston-based eBook company called Glassbook. Glassbook brought robust consumer-oriented functionality to Adobe PDF eBooks, which is one of the reasons we bought the company.

Again, we are talking about the ability to specify print rights, copying, lending and giving, document expiration, text to speech. Adobe continues to listen to the market and deliver innovative eBook technologies, and in fact I am pleased to report today that this month Adobe's next release of Adobe's eBook technology will enable libraries for the first time to lend Adobe PDF eBooks much the way they can physical books, although at a much lower operational cost and we believe with far greater efficiency.

But only the publisher and consumer can ultimately decide the value of an eBook based on the content and what rights are sold or licensed to it. So I would like to wrap up with a quick story.

In January of 2002, about 5 months ago, BarnesandNoble.com published a book of horoscopes through its publishing imprint called Barnes and Noble Digital. The book was by noted author Susan Miller. The book was sold in print and electronically as a Microsoft eBook and as an Adobe PDF eBook. BarnesandNoble.com made the PDF eBook printable, which is a feature unique to our format. This additional feature was clearly identified for consumers at the point of purchase on Barnes and Noble's Web site. After its first week on sale, the Adobe PDF eBook of the year ahead by Susan Miller was the third most popular book sold on BarnesandNoble.com and in their stores, outselling the other two formats. The reason, according to BarnesandNoble.com, was because consumers could buy it, download it immediately and print out the pages that they wanted.

The lesson to draw from this example is that ultimately the marketplace will determine if eBooks thrive. Let us face it, if publishes don't trust Adobe PDF technology, they won't put eBooks in our format and if readers think eBooks in our format are too expensive or don't have the rights that they want, they are not going to buy Adobe PDF eBooks. Surely in a market economy we must trust that the consumer is the best person to say whether we have finally gotten eBooks right.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Alexander follows:]

PREPARED STATEMENT OF JAMES M. ALEXANDER

Good afternoon, Mr. Chairman, Ranking Member Berman, Members of the Subcommittee. My name is James Alexander, and I am Director of eBooks at Adobe Systems Incorporated. I appreciate very much your leadership, Mr. Chairman, in convening this hearing and your gracious invitation to provide testimony on digital rights management technologies.

Founded in 1982, Adobe Systems builds award-winning software solutions for network publishing, including Web, print, video, wireless, and broadband applications. Adobe is headquartered in San Jose, California and employs more that 3,000 worldwide. It is one of the world's largest personal computer software companies, with annual revenues exceeding one billion dollars.

eBooks Explained

For those unfamiliar with the term, an "eBook" is shorthand for an electronic book. Like its printed counterpart, an eBook can be of any length, subject matter, and may or may not be protected by copyright. Unlike traditional print books, eBooks can be purchased online and then downloaded to be read on a variety of electronic devices, from desktop computers to laptops to palm-size organizers to advanced mobile phones. eBooks very often also incorporate security measures to protect their content from piracy, and, in the case of Adobe PDF eBooks, additional publisher-enabled features, such as the ability to print, search and copy text, or loan to others. eBooks are available now from such online vendors as Barnes and Noble.com and Amazon.com.

Most industry observers do not expect eBooks to make the printed book obsolete any time soon. eBook technology is nascent and is strongest in markets such as those for out-of-print or small-circulation titles, academic texts, journals, or publishing where speed is of the essence. eBooks also have great potential with travelers and mobile professionals, who can use them to carry a large virtual library in a very small space. Despite the early nature of the market, we estimate that more than one million eBooks will be sold in 2002.

Strong IP Protection and Usability Are Not At Odds

I would like to begin with an observation. If press accounts are to be believed, a growing number of wary consumers regard the word "management" in "digital rights management" as a euphemism for "confiscation" or a "roll back." Or, to put this view in another way, some seem to believe that there is an inevitable trade off between strong protections for intellectual property (IP) and the ability of consumers to exercise their traditional use rights when they purchase or license creative content.

Based on Adobe's experience in the electronic book market, I believe this is a false dichotomy, and that it is not only possible but also absolutely necessary to deliver both intellectual property protection for authors and use rights for consumers. Only by delivering strong "cyber-armor" will authors and publishers feel confident making their works available electronically using Adobe's technologies. And only if we deliver a quality reader experience, including many of the uses consumers have legitimately grown to expect from books in the physical world, will consumers embrace the ability to read content on a screen as opposed to on a printed page.

The Piracy Threat

Let me address the piracy issue first. As a member of the leadership team of a software company, no one is more aware of the dangers of piracy—that is to say the theft of intellectual property—than I. Indeed, if one applies the worldwide piracy rate to my company's annual sales, software piracy costs Adobe more than $600 million annually.[1] I am grateful that this Subcommittee already fully understands the broader macroeconomic effects of piracy: the sectoral U.S. trade surplus in IP is diminished, U.S. jobs are lost, and government misses out on tax revenue. Perhaps most insidiously, piracy directly affects the ability of software companies to invest in research and development, something Adobe did to the tune of more than $200 million last year.[2] This investment in R&D helps us innovate by building better products, which, in turn, enables our customers to be more productive. And productivity drives the U.S. economy. Break a link in the chain—for example, if we are forced to scale back R&D because of software piracy on the Internet—and the entire innovation ecosystem collapses, with injury to our customers and the economy as a whole.

A survey released just last week by the Business Software Alliance illustrates the depth of the piracy problem. Of more than 1,000 Internet users polled, 57% of those who have downloaded software either seldom or never pay for it. Only a scant 18% say they would never intentionally engage in piracy.[3]

Publishers and authors are aware of this massive software piracy problem, not to mention the experiences of the recording and motion picture companies with peer-to-peer piracy. Book publishers are, therefore, united in their demand that Adobe be vigilant about the security of eBooks. This is not to say that print publishers are not excited about the possibility of reaching new audiences with new kinds of works on the Internet—they are. However, the livelihoods of thousands of authors and others employed in publishing are on the line, so good security is a sine qua non for eBooks.

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[1] A study released on May 21, 2001 by the Business Software Alliance placed the average worldwide piracy rate for business software at 37%.

[2] Per Adobe's FY 2001 Form 10-K, FY 2001 research and development expenses totaled $224.1 million.

[3] Study by Ipsos Public Affairs for the Business Software Alliance, May 29, 2002.

eBooks and Fair Use

I would like now to turn to the eBook reader experience, including the ability of consumers to exercise fair use. I will be candid: our industry's first efforts with electronic books fell well short of the mark. Indeed, in April of last year (before I came to Adobe), I wrote an article highly critical of the first generation of eBooks.[4] At that time, I posited, no one in the industry was addressing what the consumer actually wanted, or was living up to the publisher's responsibility as the historical defender of the reader's experience to ensure that downloaded books were as easy to use as their paper-based counterparts. I believe ease of use, in eBooks terms, boils down to:

- Interoperability (accessing eBooks via different formats and/or devices);
- Durability (the promise that eBooks will always be readable in the future);
- Portability (allowing access to a digital library anytime, anywhere); and
- Transferability (the ability to permanently or temporarily transfer digital rights to another person).

When Adobe entered the eBook market in earnest more than a year ago with the acquisition of the Boston-based eBook company, Glassbook, we set out to design an eBook system that would address the shortcomings I identified in my article.

First, we decided that our eBooks should be based on Adobe's ISO/ANSI-standard PDF technology. Adobe PDF promises to allow users access to their digital libraries on different computer platforms and, as portable devices gain larger screens and more powerful processors, on non-computer devices as well. Second, we built capabilities into our eBooks that not only mimic the use characteristics readers have come to expect from physical books but, in some cases, add additional capability.

For example, our current eBooks reader on the Windows platform enables lending of an eBook to another person, either permanently or for a limited time. The next release of Adobe Content Server, the back-end to Adobe PDF eBooks, will enable libraries to lend eBooks much as they can physical books, although at lower operational cost and with far greater efficiency. Publishers can also choose to give users the right to copy text from an eBook. And since our eBooks are based on Adobe PDF, publishers can allow end users to print their eBooks with the look and feel of the printed version maintained with high fidelity. Retailers of Adobe PDF eBooks, now numbering 300, can create digital libraries for their customers so they can download a purchased title to as many as four different devices. Adobe PDF eBooks are unique in the industry for including so many customer-oriented use features.

Adobe is proud to work with the leading international trade and standards organization for the eBook Industry, the Open eBook Forum. We believe that this and similar industry groups are best placed to develop and promulgate digital rights management (DRM) standards in ways that are flexible, secure, and responsive to the needs of the marketplace.

The DMCA As Foundation For The eBooks Market

Before I close, I would like to say a brief word about the Digital Millennium Copyright Act (DMCA), a statute that seems to be even more relevant today than it was when enacted five years ago. There were in 1998 and certainly are today important issues at stake on all sides of the copyright debate. That said, Adobe believes that Congress struck the right balance in the DMCA. By granting a legal shield to technical measures that protect copyrighted works, Congress has encouraged technological innovation and the development of a brand new market—eBooks—that would not exist without the protections granted by the DMCA. An eBook is a kind of vault for digital content, and Congress wisely chose to outlaw the digital "lock picks" that have would otherwise have enabled piracy on a mass scale.

The DMCA makes a wise and specific exception to protect the rights of computer scientists doing legitimate security research. We at Adobe do not believe the law in any way restricts, or was ever intended to restrict, the ability of researchers to do their work and present their results. Academic research of that kind is clearly different from trafficking in a lock-picking program, something that provides no information of a research nature. In short, the DMCA makes a perfectly clear distinction between free speech and the sale of burglar tools.

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[4] "Why eBooks Suck," James Alexander, *Seybold Report on Internet Publishing Bulletin*, April 2001.

In addition, and except in one narrow instance, Congress did not mandate specific technologies in the DMCA. It wisely left technological developments to the commercial marketplace, but promised the shield of Federal law over whatever safeguarding technology IP owners adopted. *This approach has been the right one for* the eBooks marketplace.

The Elcomsoft case highlights both my points about the DMCA. First, the effectiveness of the government's prosecution in deterring other eBook piracy shows why the DMCA is so crucial if digital content is to be made widely available online. Second, the fact that Adobe has been able to quickly update its eBooks security also shows off the DMCA's flexibility in allowing private industry to change DRM technologies as frequently as necessary in order to stay one step ahead of pirates. If government were to mandate a particular DRM scheme and bureaucrats had to approve its every revision, companies like Adobe would be far less nimble in responding to future hackers.

Conclusion: Trust the Marketplace

Ultimately the marketplace will determine if eBooks will thrive. If publishers do not trust Adobe, they will not make their content available. And, equally important, if readers think our technology is clumsy, or if the price is too high for the use features provided, consumers will not buy eBooks. Surely, in a market economy we must trust that the consumer is the best person to say whether we finally have gotten the eBooks formula—including IP protections, use features, and pricing—right.

Mr. COBLE. Thank you, Mr. Alexander.

Mr. Jacobs.

STATEMENT OF PETER JACOBS, CHIEF EXECUTIVE OFFICER, SUNNCOMM, INC.

Mr. JACOBS. Good afternoon, Chairman Coble, Representative Berman and Members of the Subcommittee. There is a battle raging of which you are all aware, a battle between the traditional music industry and the consumer, who is armed with the power and promise of technology advancing faster than any business model can keep up.

Over the last 20 years consumers have developed expectations on what they can and cannot do with the music they buy. Consumer expectations at times can be diametrically opposed to one of our very first rights, copyright and invention protection.

First, I feel a review of some SunnComm history is in order. Based in Phoenix, Arizona, SunnComm is a publicly traded small technology firm focused on the development of technology design to limit the unauthorized copying of music compact disks, CDs, while providing the CD buyers the ability to create authorized copies of the music contained on the CD for their personal use.

The DRM and interface technology, which has been codesigned by several major record labels, is intended to provide consumers with a sizable portion of their fair use expectations, while protecting the rights held by artists, record companies and publishing companies.

In January 2000, when I first arrived at SunnComm, there was nary a whisper about digital duplication dangers lurking in the waters ahead. Peer-to-peer file sharing was brand new. The promise of faster downloads through broadband access was in its infancy. CD burners were still more than $300. No one spent a lot of time thinking about the consequences inherent in the CD's digital ability to reproduce exact clones of themselves, except for the audio and hardware manufacturers who knew that protected music content on audio cassette tapes or digital CDs would allow them to create a very vibrant and very profitable music copying business.

SunnComm was formed by a cross-section of business and technology-oriented people who had experience in the entertainment sector. As SunnComm set about creating this first solution, we discovered a method of altering the CD so that it would play on most CD players but not in the computer's CD-ROM. Not allowing play on PCs, it was thought, would reduce the amount of music transfers from those computers onto the Internet, which by March of 2000 began to emerge along with peer-to-peer file sharing, such as Napster.

SunnComm felt that in order for the CD music protection technology to be accepted by the public, the company must also find a way for music buyers to transfer their favorite music recordings from the legally purchased CD to their computers. So SunnComm developed what is called CD-3 technology, an additional section electronically carved out of the CD that contained features only playable on a personal computer. Included in the CD user interface was the capability to move the selected recordings from the CD to the personal computer under a special license grant by the record company with the technology being provided by SunnComm and Microsoft. Every time the songs residing on the computer were accessed and played, a license on the computer itself was verified. Once found on the computer, the song would play.

In March 2001, the battle lines were drawn with America's first copy-protected CD, Charlie Pride - A Tribute to Jim Reeves. That is this CD here. It was released with SunnComm's MediaCloQ and Digital Rights Management technology. A second specially encoded set of the album's songs could then be downloaded by the buyer from the Internet to reside on the buyer's computer or laptop at no additional charge to the CD purchaser. Mr. Pride's album, released by Music City Records, hit the stands and was clearly marked as both protected and enhanced. Even so, it quickly became a lightning rod for the debate that ensued, copyright protection versus fair use.

Along with the introduction of this first copy-protected CD came the controversy, and significant progress on behalf of all concerned copyright owners, creators and CD buyers have been made since the Charlie Pride days. SunnComm, Microsoft and several major record companies with whom we are working have evolved into a new protection reality. That reality involves creating protection and authenticating software on the CD itself that allows consumers in a legal and licensed way to make limited copies for their personal use or even to send licensed copies to friends and family.

For those reasons and many others, as I have included in my testimony but I don't have time to enumerate now, I believe that technology and open-minded cooperation, not managed by electronic lobbies, can provide a solution to all players in the music industry. I recommend to the Committee that imposing regulations at this juncture is premature. Instead, I encourage the parties in each segment to come together, informally at first, to discuss what it would take to create a very viable business solution to the turf battle over Internet and CD music delivery.

Thank you very much.

[The prepared statement of Mr. Jacobs follows:]

PREPARED STATEMENT OF PETER H. JACOBS

Good afternoon Chairman Coble, Representative Berman, and members of the Subcommittee. There is a battle raging of which you are all aware . . . a battle between the traditional music industry, and the consumer who is armed with the power and promise of technology advancing faster than any business model can keep up. Over the last twenty years, consumers have developed expectations on what they can and cannot do with the music they buy. Consumer expectations can be diametrically opposed to one of our country's very first rights—copyright and invention protection.

First, I feel a review of some SunnComm history is in order. Based in Phoenix, Arizona, SunnComm is a publicly traded software technology firm focused on the development of technology designed to limit the unauthorized copying of music compact discs (CDs) while providing CD buyers the ability to create "authorized" copies of the music contained on the CD for their own personal use.

The DRM and interface technology, which has been "co-designed" by several of the major record labels, is intended to provide consumers with a sizable portion of their "fair use" expectations while protecting the rights held by artists, record companies, and publishing companies.

In January 2000, when I first arrived at SunnComm, there was nary a whisper about digital duplication dangers lurking in the waters ahead. Peer-to-peer file sharing was brand new, the promise of faster downloads through broadband access was in its infancy. CD burners were still $300. No one spent a lot of time thinking about the consequences inherent in the CD's digital ability to re-produce exact clones of themselves except for the audio hardware manufacturers who knew that unprotected music content on audio cassette tape's or digital CD's would allow them to create a vibrant and very profitable home music copying business.

SunnComm was formed by a cross-section of business and technology-oriented people who had experience in the entertainment sector. Our staff was quick to recognize the peril awaiting recording artists, record companies, songwriters and music publishers in the form of unauthorized music CD duplication.

When first polled, record companies were almost unanimous in their CD protection requirements: They wanted software technology applied to the CD master that would totally lock up the music on the CD.

As SunnComm set about creating this first "solution," we discovered a method of altering the CD so that it would play on most CD players, but not in a computer's CD-Rom drive. Not allowing play on PCs, it was thought, would reduce the amount of music transfers from those computers onto the Internet, which by March of 2000 began to emerge do to the rising popularity of Peer-to-Peer (P2P) file sharing technology such as Napster.

SunnComm felt that in order for the CD music protection technology to be accepted by the public, the company must also find a way for music buyers to transfer their favorite music recordings from their legally purchased CD to their computers. So SunnComm developed what is called CD–3 technology—an additional section electronically carved out of the CD that contained features only playable on a PC. Included in the CD–3 user interface was the capability to move the selected recordings from the CD to the personal computer under a special license granted by the record company with the technology being provided by Sunncomm and Microsoft. Every time the songs residing on the computer were accessed and played, a license on the computer, itself, was verified. Once found on the computer, the song would play.

Because the solution, to some extent, restricted a consumer's unlimited ability to copy the CD music anywhere, it was viewed by a segment of the public as an attack on "fair use" and the consumer's construed right to make unlimited personal copies. The record and music publishing industries never intended for the consumer to be make unlimited copies, but to have just enough copying ability to provide for all of the legal CD buyers' various playback systems.

SUNNCOMM INTRODUCES FIRST COPY PROTECTED CD IN AMERICA

In March of 2001, the battle lines were drawn when America's first copy-protected CD, *Charley Pride—A Tribute to Jim Reeves*—was released with SunnComm's MediaCloQ and Digital Rights Management (DRM) technology. A second, specially "encoded" set of the album's songs could be downloaded from the Internet to reside on the buyers' computer or laptop at no additional charge to the CD purchaser. Mr. Prides' album, released by Music City Records, hit the stands and was clearly marked as both, protected and enhanced. Even so, it quickly became a lightening rod for the debate that ensued. Copyright protection versus fair use.

Along with the introduction of the first copy-protected CD in the US came controversy. In order to play the songs in a PC, the user would be directed to a website enabling them to first download special DRM-encoded files. Since the digital original CD tracks could not be directly playable when placed in the CD-Rom of a PC, (to defeat various disc copying programs) the CDs also did not play in DVD players. Playability on standard CD players and auto CD players was very high.

Significant progress on behalf of all concerned copyright owners, creators and CD buyers has been made since the Charley Pride days. SunnComm, Microsoft and several major record companies with whom we are working have evolved into a new protection reality. That reality involves creating protection and authentication software on the CD, itself, that allows consumers, in a legal and licensed way, to make limited copies for their personal use and to send licensed copies to their friends and family. We call this product "Promo-Play" and we feel that if given a choice, consumers will opt to utilize this creator-endorsed method of CD buyer's rights of copying or sharing a song. Sunncomm's Promo Play tracks sent to friends are playable on the friend's computer for a pre-set period of time or number of plays or time period; then the playback license expires at which time the user is (if online) in directed to a record company website where a discount offer is made to the user to purchase the CD. This DRM copy of the music is embedded into the user interface and resides on the CD alongside the original digital audio recording tracks.

SunnComm has found that by incorporating DRM solutions onto the music CD, it is possible to combine technology that locks down the digital audio content while providing important capabilities such as licensed copying, file transfer, and pc playability to the consumer. I believe near-universal playability can be achieved as we continue to move toward perfecting copy protection and DRM solutions in the remaining years of product life left for the standard audio CD.

THE OTHER HALF THE PUZZLE

Even if SunnComm or others are successful in striking a balance between consumer and music industry as it relates to the copy-protected music CD, we need to rise to the challenge of finding ways to apply our DRM-based technology in a consumer-acceptable fashion to P2P file-sharing on the Internet. SunnComm and its partners may be in a unique position to "broker the peace between consumer, record company, song writer, music publisher and artist. . . . The protection and authorized copying solutions for audio CDs and Internet file swapping can be fashioned out of the same cloth using Sunncomm protection and Microsoft DRM solutions and extensive and sensitive public relations efforts. .

NOT A "NEW" CHALLENGE

Historically, emerging "new" technologies have faced similar challenges. Almost 100 years ago, as broadcast radio first came on the scene, artists and publishers, the predecessors of today's record labels, were up in arms that their work was being radio-broadcasted to thousands, then millions of people, without compensation to them for their effort.

It was as serious an issue then as P2P file sharing is to us now. Over time, systems were put in place to compensate artists and their representatives through ASCAP & BMI royalties. First came the distribution invention, then the fearful business uproar of the content providers, then a fair, realistic solution that was sensitive to all parties concerns.

Flash forward decades later. A well-known entertainment industry leader who many of you know, held up a videotape and declared that, if left unregulated, the VCR would spell the end of the movie business.

These historic events may apply to this modern dilemma we find ourselves in today. We can predict a tendency for the status quo to react sharply during the shift in the technology paradigm. So too can we expect that the new technology, P2P file sharing, will eventually be adapted.

THE GENIE IS OUT OF THE BOTTLE

The Internet isn't going away. Broadband and its promise of faster download times is a reality. Hard disc storage space is getting cheaper by the week, CD-rom burners are $90, and the most empowering and seductive technology to come so far—P2P file sharing is not going to get "un-invented" or handcuffed anytime soon.

Another reality—locking music up so that it is delivered over the Internet available only to paying customers it is a myth. In an age when genome experimentation is occurring in graduate students' basements with computers and processors pieced together from the local electronics store, it is a fact that those with the talent and inclination will always be able to "crack" our codes . . . any codes. The race to devise an "uncrackable" protection wrapper around music delivered on the Internet, in my opinion, is a fool's game. Instead, security must be likened to locks we put on our houses. A determined thief will be able to break in. Honest people and most others will be deterred. Also, as far as music on the Internet is concerned, we need to remember that even a legitimately acquired song can be copied by digital or analog methods when it is played (and heard). Once copied and subsequently swapped within a file-sharing service, the game is over . . . a million copies of a popular song could be propagated in a single day through peer-to-peer networking.

This incredibly robust P2P technology isn't going away. Quite the opposite. P2P file sharing is a "killer application." People love it. Just like email was to the initial growth of the Internet, so to is P2P music file-sharing to this country's and the world's broadband growth.

In my opinion, what the record industry must now do is re-position their public stance that file-sharing services are criminals and work in earnest with those P2P companies who have captured and maintained an enormous user base and devise a business model capable of exploiting this incredible technology and their millions of faithful users. We, at SunnComm, feel that Morpheus or Grokster-type P2P file sharing services and the record companies, artists, songwriters and music publishers can find common ground using the promise of DRM to secure, account and pay for freely distributed music files to their P2P members. The file-sharing services then pay all concerned parties, recording artists, songwriters, music publishers and music retailers a fair price for the use of their copyrights.

REVENUES FROM "FREE" DOWNLOADED MUSIC?

Absolutely. Your favorite network programs on radio or television are "free" to you. Less-than-CD-quality music over the Internet can be free as well. The cost of producing a television show can and does cost millions of dollars per program. Yet, networks manage to deliver it to us for "free." P2P files sharing networks are just that . . . a network with an established and faithful audience. Because of the free broadcast of these programs, the networks or local stations can generate huge revenues from those advertisers. And there are a lot of them. I understand that one file sharing service has a hundreds of million of dollars set aside for the record companies, artists and publishers and the fund is growing daily.

The file sharing services may actually have more people online at one time than any of the TV & Cable networks. There are some very big numbers out there. Some of the P2P technology is able to launch directed advertising to their users much more effectively than any TV or radio station can. The advertising directed to a P2P member will prove more effective (and therefore more valuable) per viewer to the advertiser because it is possible to personalize the advertising and direct the message.

Once the downloading of free music on the Internet is de-stigmatized and artist-endorsed like its counterparts in Radio, MTV and CD to CD copying hardware, I believe that new music revenues will be discovered. As this revenue source continues to grow, it will continue to give its participants who choose to go online—free, less-than-CD quality access to the music they love.

Remember, this is not an "all or nothing" proposition. Most music buyers don't download ANY music at all. They wouldn't know the first thing about how to go about downloading a song. They would continue to buy music utilizing all of the current traditional outlets as well as blank CD's to burn copies on their CD copiers. And, of course, buying CDs produced by the content provider will always uniquely give the listener a much higher quality copy and valuable packaging. Conversely, many who download music also opt to buy the better-quality CD.

Through DRM solutions similar to SunnComm's PromoPlay, P2P-accessed and delivered music can be electronically "encoded" during its delivery to consumers to protect its quality and provide real business accountability and virus protection for all concerned parties. I believe the ultimate solution is to "de-stigmatize" the downloading of mp3-type music on the Internet for millions of applauding user-citizens by incorporating a responsible, reliable, and accountable DRM-driven P2P delivery system. We believe this strategy will adequately and fairly compensate the artists, the record companies and the publishers. This model will work if we build it. Since I believe stopping P2P music sharing is impossible, free sponsored, inferior quality MP3 music is a solution that will work today.

PIRACY CAUSES MAJOR FINANCIAL LOSSES TO AMERICA'S ECONOMY

When a legal CD is sold it was manufactured by a company contributing to the local, state and federal revenues employing tax-paying Americans who spend their wages on buying goods from the American retail community. Further the wholesale distributor and retailers who would have sold those legal CD's are out of the income and tax paying loop and their reduced revenues puts more Americans out of work and onto the unemployment rolls. This is a result that has to do with legalized audio CD burners as well as Internet downloading and I believe the best way to stop this major income reduction to the American economy is creating copy-protected CD's and legalizing P2P services that pay the copyright owners. Imagine a day when music file sharing services exist to the benefit of consumers and providers alike, rewarding and extending the reach of the artists and record company marketing efforts while providing those so inclined to enjoy protected music from the Internet to do so at no direct expense to them. Same as radio. Same as television.

FOR MUSIC AT LEAST, A BUSINESS AND PROTECTION SOLUTION IS AT HAND

SunnComm's own music CD experience coupled with our relationships with major record companies, several major file-sharing services, as well as a technology partnership with Microsoft and others, leads me to believe that a financial and technological solution can be realized between these new P2P-based companies and the record companies, artists and publishers.

I believe there exists the revenue potential to support this free-access-to-music model. As far as music is concerned, I don't believe the courts or Congress will be able to solve this dilemma. Every time a file-sharing service gets sued, another two pop up. I believe this business model will succeed because it is the only solution that will serve the music lover, the P2P file sharing services, record companies, the artists, music publishers and the American economy.

For those reasons, I believe technology and open-minded cooperation not managed by electronic hardware lobbies can provide a solution to all players in the music industry. I recommend to the committee that imposing regulations at this juncture is premature. Instead, I encourage the parties in each segment to come together, informally at first, to discuss what it would take to create a very viable business solution to the turf battle over Internet music delivery as well as to protected CD's.

At the request of the Committee, SunnComm will cooperate within its means with all parties involved to achieve what it believes to be a very "do-able" technology solution for music.

Thank you all for allowing SunnComm to provide this input from the front lines of this battle.

Mr. COBLE. And since I am a fan, Mr. Jacobs, did you say that that was a tribute to Jim Reeves, that Charlie Pride was a tribute to Jim Reeves?

Mr. JACOBS. Yes.

Mr. COBLE. I like both of them. Thank you, Mr. Jacobs.

Mr. Hausmann.

STATEMENT OF FRANK HAUSMANN, CHIEF EXECUTIVE OFFICER, CENTERSPAN COMMUNICATIONS CORPORATION

Mr. HAUSMANN. Thank you, Chairman Coble, Congressman Berman and other Members of the Subcommittee. My name is Frank Hausmann, and I serve as Chairman and Chief Executive Officer of CenterSpan Communications Corporation. CenterSpan is a NASDAQ-listed company headquartered in Portland, Oregon, and has developed and commercially launched a next generation software-based Content Delivery Network, or CDN, capable of supporting ultra low-cost delivery of DRM-protected rich media on a worldwide basis. Our new CDN service is called C-StarOne.

Mr. Chairman, CenterSpan is totally committed to the protection of intellectual property rights, including our own 19 separate C-StarOne patent applications. While today's C-StarOne actively supports Microsoft's Windows Media DRM, our C-StarOne service is DRM agnostic and is capable of supporting a variety of DRM solutions. In fact, C-StarOne not only supports a variety of DRM solutions but augments them by adding an additional six layers of network security. So placed in the context of this hearing and my distinguished colleagues here today, C-StarOne is a highly secure content delivery network, an intelligent distribution channel if you will, not a DRM technology per se.

I commend the Subcommittee for holding this important inquiry into DRM solutions with the objective of facilitating a win-win value proposition for both the owners and providers of copyrighted rich media content and the millions of consumers who wish to access high quality content via their home on portable computers, set top boxes and other portable home and computer electronic devices. The consumer benefits of DRM protected digitally distributed content can and will include broad access to high quality media entertainment at the lowest feasible cost.

Today's hearing will help to further educate both the public and the industry about the unprecedented opportunity that we collectively have to meet the large demonstrated consumer demand for digitally distributed media and entertainment content.

Let us quickly review the needs and desires of each member of this new digital distribution channel. Content owners need effective Digital Rights Management security and economics. Wholesalers and distributors need cost effective content delivery networks. Consumers want affordable access to high quality digitally distributed media entertainment with an easy to use user interface.

Mr. Chairman, the common denominator of need between content owners and providers, wholesalers and distributors, and the consumer is basic economics. The entire industry has needed a low-cost, highly secure distribution channel capable of profitably preparing, protecting and delivering rich media entertainment to the consumer. The lower the costs incurred by the entire industry in the distribution channel, the lower the consumer price point can be, while still supporting compelling economics for the entire industry.

CenterSpan provides a unique suite of content delivery network services capable of supporting compelling economics for all three of these constituencies. Our recently announced business partnerships with major media companies are clear testimony that Hollywood is embracing cutting-edge cost-effective digital distribution and security solutions as it strives to meet consumer demand. Any reluctance to fully engage in online media distribution will be swept aside by the realization that cost effective technological answers to valid business concerns are available today and do provide new and significant economic incentives for all members of this new distribution channel.

On February 28th of this year we announced an agreement whereby Sony Music Entertainment will make recordings available from its catalog of worldwide famous music for CenterSpan to digitally distribute as a wholesaler via its secure C-StarOne content delivery network. On May 21st, Vivendi Universal Net USA, the U.S. arm of Vivendi Universal's Paris-based Internet and technology unit, announced that it intends to launch a new online entertainment service using CenterSpan's C-StarOne content delivery network. The new service will debut later this year on one of VUNet USA's entertainment properties.

Clearly these two announcements are evidence that major content providers are recognizing the tremendous economic potential of promoting and selling legitimate DRM-supported content via a low-cost distribution channel such as C-StarOne.

The C-StarOne intelligent distributed network supports compelling bandwidth savings, provides content owners with robust security, and provides consumers with better speed and reliability. The entire industry is discovering that software-based intelligent distributed content networking offers the most compelling viable means of delivering digital content to a large audience today.

Thank you very much.

[The prepared statement of Mr. Hausmann follows:]

PREPARED STATEMENT OF FRANK G. HAUSMANN

Chairman Coble, Congressman Berman, and other members of the Subcommittee, my name is Frank G. Hausmann. I serve as CEO and Chairman of the Board of CenterSpan Communications Corporation, headquartered in Portland, Oregon. CenterSpan is a NASDAQ-listed (stock symbol: CSCC). CenterSpan develops and markets a dynamically scaleable, intelligent distributed network capable of supporting the low cost storage and delivery of rich media worldwide. My professional background includes extensive computer industry experience in both legal and management roles.

First, I wish to commend the Subcommittee for holding this important inquiry into the digital rights management (DRM) solutions that are available today to create a win-win value proposition for both the providers of copyrighted rich media content and the millions of consumers who wish to access high-quality content on their computers and other electronic devices. The consumer benefits of DRM-protected digitally distributed content include broad access to high quality media at the lowest feasible cost.

Today's hearing will help to further educate both the public and industry about this dynamic sector and the unprecedented opportunity we now have to meet the large, demonstrated consumer demand for digital audio and video delivery. I also wish to compliment Chairman Sensenbrenner, Congressman Conyers, and other Committee members for their continued dedication to this subject, as evidenced by the Committee's recent solicitation of input from industry and the public regarding consensus copyright legislation that could help spur the further development of the online media marketplace.

TECHNOLOGY AND THE ONLINE MEDIA MARKETPLACE

Mr. Chairman, this Subcommittee is acquainted more than most with the breakneck changes resulting from the worldwide deployment of digital technology, the tremendous challenges it presents to traditional businesses models, as well as to copyright law and policy. You strove to get ahead of the curve with enactment of the Digital Millennium Copyright Act (DMCA) in 1998. And you are actively engaged now in considering whether additional statutory change is needed.

But you also know more than most that the slow and difficult pace of the legislative process lags behind a rapidly evolving digital marketplace. You also understand that, while law and policy can create a supportive framework for a thriving online media marketplace, they cannot create it. That is a job for those who engage in business and technology.

From the point of view of a business person leading a technology enterprise, I can tell you that the tools required to build that marketplace are here today and do not require additional legislative support. Our company has had a long and in-depth dialogue with all the essential parties comprising that marketplace—the providers of content, online distributors, as well as consumers—and we have a keen understanding of the needs and desires of each member of this new channel:

- Content owners need effective DRM security.
- Distributors need cost-effective storage and delivery technologies.
- Consumers want affordable access to a high-quality interactive media experience.

While there may well be other viable solutions, CenterSpan has developed and can provide a unique suite of content delivery network services that balances the demands, and optimizes the sometimes conflicting objectives, of these key constituencies. Our recent business partnerships with major media companies are clear testimony that "Hollywood" is embracing cutting edge and cost-effective technology as it strives to meet consumer demand. I think we are all aware that there may not be enough time left this year to enact any major amendments to our copyright law. Indeed, Mr. Chairman, it is quite likely that when you return to start the new Congress next January you will see that very significant and positive changes have occurred in the marketplace. This will occur as any residual reluctance to fully engage in online media distribution is swept aside by the realization that effective technological answers to valid concerns are available today and provide significant economic incentives for all members of this new distribution channel.

COMPANY BACKGROUND AND ACTIVITIES

CenterSpan's mission is to create the lowest cost, most highly secure digital distribution network—and we have. By definition, this means that we are committed to the protection of intellectual property (IP). Our proprietary, software-based distributed streaming and downloading technologies are protected by 19 separate patent applications. Our C-StarOne™ service is capable of supporting a variety of DRM technologies that enable content owners to set their own "usage rules" for copyrighted materials.

We have developed and deployed next generation network technology for the low cost delivery of digital rich media and entertainment. Our goal is to develop a secure digital content distribution channel and business model that will provide great economic incentive and benefit to all without policy disagreements and litigation.

In December 2000 we purchased the 4.5 million-customer list and other assets of Scour Exchange at a bankruptcy auction for $9 million in cash and stock. Scour was a pioneering P2P system for the delivery of audio and video, but its failure to comply with copyright law resulted in a barrage of litigation and subsequent bankruptcy.

In the spring of 2001 we launched the consumer trial of a new legal Scour Exchange, Scour.com, which today is a technology and marketing showcase for our C-StarOne network. Tens of thousands of users are participating in the free trial. C-StarOne supports the secure and licensed distribution of digital content including music, music videos, broadcast television catalog, full motion video, e-books, documents, as well as digital photos, images and graphics. Our proprietary market research, as well as extensive conversations with all segments of the digital entertainment world, convinces us that there is substantial consumer demand for such digital content services—provided they offer the right value equation which includes ease of use, content, and price.

In February 2001, CenterSpan established a Digital Media and Entertainment Group. The joint executive team of Michael Kassan and Howard Weitzman runs this Los Angeles-based unit. Mr. Kassan formerly served as President and Chief Operating Officer of Western Initiative Media Worldwide, now a division of the Interpublic Group. In 1997, Mr. Kassan was named by *Advertising Age* as one of the top media executives in the United States. Mr. Weitzman was formerly Executive Vice President of Universal Studios and has been a well-respected entertainment attorney for over 30 years. Both of these accomplished executives came to CenterSpan from Massive Media Group, a developer of DRM based applications and services for the entertainment and advertising markets. Together, they brought to CenterSpan an understanding of DRM technologies, and the entertainment, media, and advertising sectors that is invaluable to our future growth.

RECENT CONTENT DISTRIBUTION DEALS

I am proud that CenterSpan's superior technology enabled us to become the first and, so far, only distributed content delivery network to be licensed to distribute copyrighted digital content from major media companies. On February 28th of this year we announced an agreement with Sony Music Entertainment whereby Sony will make recordings available from its catalog of world-famous music performances for CenterSpan to digitally distribute via its secure C-StarOne content delivery network. This non-exclusive agreement marks the first time Sony Music Entertainment has made its artists' music available to a digital distributor for use on a secure distributed content delivery network.

The agreement lets CenterSpan provide music from Sony Music Entertainment artists to a wide variety of online service providers seeking to offer their subscribers streaming and downloadable music. Using C-StarOne, service providers have the flexibility to cost effectively scale their offerings to fit a variety of business models, including pay-per-use, downloadable or streaming content.

At the time of the announcement, Fred Ehrlich, President of New Technology and Business Development at Sony Music Entertainment stated, "Sony Music Entertainment has always supported new technological innovations that help us bring our artists' music to their fans. We are interested in working with peer-to-peer networks that respect copyright, and CenterSpan's C-StarOne network does just that."

The agreement with Sony Music Entertainment is a tremendous validation of C-StarOne as a trustworthy delivery network for a media company's top content. C-StarOne creates a cost-effective distribution channel for worldwide delivery of rich digital media that will enable digital distribution to move from an emerging stage to a growth stage with solid economics. Our relationship with Sony Music Entertainment is based on a common vision of the future of secure digital distribution. C-StarOne will provide a wide variety of Internet service providers and portals with quick and secure access to top digital media and entertainment content for their Internet subscription or pay-per-use services. This will substantially broaden the availability of digitally distributed music worldwide.

On May 14th, this partnership was taken to a new level when Sony Music Entertainment launched a promotion of songs from five of its artists using Scour.com, CenterSpan's showcase for C-StarOne™, CenterSpan's content delivery network for securely delivering rich media over the Internet. Scour users are able to listen to these Sony Music Entertainment artists' tracks on their computers as many times as they wish for 30 days after downloading. At the time of this announcement, Jim McDermott, Senior Vice President, Operations and Label Relations, Sony Music Entertainment, said, "Sony Music Entertainment has always embraced new technology that furthers our artists' reach, and CenterSpan's C-StarOne One delivery network will allow music fans to share the music that they love with their friends, legitimately. Working with Scour.com gives us great promotional opportunities like this for our artists. This promotion will kick off Sony Music's relationship with CenterSpan on a high note."

On May 21st of this year, Vivendi Universal Net USA (VUNet USA), the U.S. arm of Vivendi Universal's Paris-based Internet and technology unit, announced a letter of intent for VUNet USA to launch a new digital entertainment service using CenterSpan's C-StarOne™ content delivery network. The new service is expected to debut later this year on one of VUNet USA's entertainment properties. In conjunction with the announcement, Steve Sheiner, Chief Revenue Officer of VUNet USA stated, "We look forward to working with CenterSpan to launch an innovative entertainment service that offers premier content to millions of online fans." This new venture will provide a value-added service unique to the media and entertainment market. The suite of value-added services to be utilized includes content aggregation, content hosting and delivery, digital rights management, license clearing, royalty administration and network reporting.

Clearly, these two announcements prove that major content owners and their Washington advocates are recognizing the tremendous potential of legitimate, DRM supported intelligent distributed networks. In remarks delivered on November 6, 2001 before the O'Reilly Peer to Peer Conference here in Washington D.C., Recording Industry Association of America (RIAA) head Hilary Rosen noted:

> *The problem with peer to peer is not the technology but how it is used. The multiple exciting applications of P to P that are being discussed over these few days show the limitless potential of the technology in multiple ways. The ability to achieve cost savings on storage and bandwidth, the web tools, the meeting applications, the communications applications, the customer service applications are all extremely exciting.*

COST EFFICIENCIES OF DISTRIBUTED NETWORKS

CenterSpan embraced the software-based content delivery marketplace out of our belief that distributed networks and applications are both the origin and the future of the Internet. The Internet's fundamental support of a widely dispersed and virtually limitless number of participants, coupled with the transmission of digital information through packet switching that breaks up messages and content and sends it between users via multiple routes, was chosen to assure communication regardless of attacks on any single component of the system. The result is the most robust, resilient, and useful communications system in history. Within this fundamental architecture, pushing content to the edge is the best means for providing high quality, on-demand delivery of any content in the most cost-effective manner.

The C-StarOne intelligent distributed network supports compelling bandwidth savings, provides content owners with robust security, and provides subscribers with better speed and reliability. From the user's perspective, the network "looks and feels" like a central server network. But from a content service provider's perspective, content is cut into thousands of "segments" and hosted and distributed from points or "peers" in the network.

All files in the C-StarOne network are encrypted, signed with a digital signature, and encased in a DRM wrapper before being introduced into the system. The content is centrally controlled, indexed and tracked through the network. User machines must be authenticated before content can be downloaded or streamed. This revolutionary network scales easily and naturally because points or "peers" provide additional network redundancy while keeping a tight lid on bandwidth costs. I have no doubt, based on our ongoing business conversations, that content owners and telecommunications providers understand that a software-based, intelligent distributed content delivery network is the only economically viable means of delivering digital content to a large audience.

APPLICATIONS FOR WEBCASTERS

The very substantial cost savings that can be achieved through an intelligent distributed network were again documented on April 3rd of this year, when we announced the results of a pilot with RadioCentral to stream Internet radio content using C-StarOne. The results of the initial pilot indicate that RadioCentral realized a more than a 90 percent bandwidth savings over its central server streaming delivery system.

Jim House, Chief Executive Officer at RadioCentral, had this to say: "The relatively high cost of bandwidth has been a barrier for Internet broadcasters and has pushed a number of players out of the market. The critical success factor of this business is centered on growing an audience and getting them to increase their listening time, which correspondingly increases bandwidth costs. CenterSpan's C-StarOne CDN Services reduces bandwidth costs so significantly that it can truly be called an industry-enabling technology. It is good news for both the provider and the audience because it lowers costs and delivers a better listening experience."

C-StarOne provides the Internet radio industry with an economically compelling alternative for content delivery, allowing it to accommodate a growing audience while keeping a lid on their infrastructure costs. The results of this pilot further validates the security and economics of the C-StarOne distributed network for downloading and streaming rich media. Your Subcommittee has of course been closely monitoring the continuing controversy regarding the recommendations of the CARP regarding the proper royalty rate for the compulsory webcasting license established in the Digital Millennium Copyright Act (DMCA). Regardless of the ultimate disposition of that rate, much of the discussion has neglected to note that a central server-based webcasting model is of very dubious economic viability, given that cost efficiencies do not accrue when larger audience and longer listening time translate into expensive additional requirements for bandwidth. The use of software-based content distribution, as demonstrated by the Radio Central pilot, provides webcasters with a technology that allows their business to grow in a cost-efficient way.

In addition, the integral network reporting function incorporated within C-StarOne provides a means of generating and aggregating content and usage data that must be a part of any royalty payments system. This aspect of our technology works equally well for the compulsory license of non-interactive Webcasting established by the Digital Millennium Copyright Act and for individual content licenses negotiated between copyright owners and Internet distributors.

DRM, FAIR USE, AND PUBLIC POLICY

Since enactment of the DMCA, Congress has engaged in a dual enterprise. Your first objective has been to determine the current state and anticipated evolution of digital entertainment technology and applicable law. Today's hearing is a valuable addition to that data gathering process.

Your second task has been to determine whether additional legislative intervention is required to preserve the goals of copyright law and the rights of copyright holders, while promoting the further development of digital distribution of music, movies, and other rich cultural media. Once again, Congress must balance traditional legal values with new technology that, depending on its use or misuse, may promote or undermine the progress of science and the useful arts. CenterSpan believes that what we have already learned in developing the first licensed and secure software-based content delivery network, from Scour's consumer trial, and from our ongoing and precedent-setting joint ventures with major media companies, can be of substantial value to those ongoing Congressional deliberations.

We take strong exception with those who argue that the utilization of DRM is inherently at odds with the fair use rights reserved to individual users of copyrighted material. Depending on whether a consumer is renting or buying digital content, content owners have a need to establish reasonable time and usage restrictions on digital media in order to have the assurance that Internet distribution will not be the equivalent of commercial suicide. However, the marketplace will penalize excessive DRM restrictions because the digital media distribution business, like the traditional brick and mortar channel, is a consumer service business, and failing to meet the legitimate expectations of consumers will inevitably lead to the failure of digital media ventures.

Although primary reliance should be placed upon market forces, some legislative intervention may be desirable to establish a "middle way" that steers between the conflicting views and agendas of copyright anarchists versus copyright maximalists. This middle way should be firmly grounded in clarifying consumer rights in the digital age. The notion of a new and affirmative basis for assuring the goals of "fair use" was laid forth in the pioneering 2000 National Research Council report, "The Digital Dilemma: Intellectual Property in the Information Age". After concluding that "fair use and other exceptions to copyright law should continue to play a role in the digital environment", and that "the fair use doctrine may also prove useful as a flexible mechanism for adapting copyright to the digital environment", it issued this policy advice:

> *Recommendation: The committee suggests exploring whether or not the notion of copy is an appropriate foundation for copyright law, and whether a new foundation can be constructed for copyright, based on the goal set forth in the Constitution ("promote the progress of science and the useful arts") and a tactic by which it is achieved, namely, providing incentive to authors and publishers. In this framework, the question would not be whether a copy had been made, but whether a use of a work was consistent with the goal and tactic (i.e., did it contribute to the desired "progress" and was it destructive, when taken alone or aggregated with other similar copies, of an author's incentive?). This concept is similar to fair use but broader in scope, as it requires considering the range of factors by which to measure the impact of the activity on authors, publishers, and others.*

CenterSpan believes it may be useful to consider Federal legislation that carves out a digital fair use "safe harbor" to preserve this key protection of informed discussion, criticism, and debate, as well as to affirmatively delineate consumer rights. We have always maintained that the marketplace can best determine the reuse limitations supported by DRM technologies and is most likely to set the optimal balance between the desires of consumers and the legitimate concerns of content owners. However, experience has also led us to conclude that the best means to stabilize the digital media marketplace, reduce disruptive and expensive litigation, and encourage consumers to utilize legitimate services may be the enactment of Federal legislation stating, as clearly as possible, what reasonable and legitimate uses consumers may make of lawfully acquired digital media. Such legislation must recognize and be in harmony with the statutory rights of copyright holders. But it should also be affirmative in nature, going beyond the existing concept of "fair use" which is but a defense to allegations of copyright infringement. Such legislation should be as explicit as possible in laying out how consumers may legally use their copyrighted digital materials. Since it may be impossible to envision all types of usage supported by future technologies, the legislation should provide clear principles to guide the courts. We are under no illusions that it will be easy to write, much less enact, such legislation. But we do think that it may be the single most important and useful initiative Congress could do to spur the development of licensed online media services.

CONCLUSION

CenterSpan appreciates this opportunity to share its views, market experience, and vision for DRM-protected content delivery. We look forward to working with the Subcommittee and all others who are striving to assure that the legal and policy structure for digital media in the twenty-first century is fully relevant, and strikes the proper balance between the rights and interests of all stakeholders, in this exciting and rapidly evolving marketplace.

Thank you for letting me share these thoughts with you today. I would be pleased to answer any questions.

Mr. COBLE. Thank you, Mr. Hausmann, and thank you, gentlemen.

We have been joined by the gentlelady from Pennsylvania, Ms. Hart, the gentleman from Utah, Mr. Cannon, and although not a member of this Subcommittee, Mr. Schiff from California and Mr. Jenkins from Tennessee was with us, but he had to depart. Hope-fully he will return. Well, the voting bell has not yet sounded. So we will commence with questioning.

Now, we apply the 5-minute rule to us as well. So, gentlemen, in the interest of time, if you can give me a yes or no to this. Do you believe that the Federal Government should impose a single DRM standard or some other anti-piracy regulation on an annual basis?

Mr. Poole.

Mr. POOLE. Microsoft does not believe that the Federal Government should mandate any single technology, ours or anybody else's. We believe that protection of intellectual property is paramount and that interoperability among the innovative solutions that we and other members of the industry are producing is also critical. But that is our position.

Mr. COBLE. Mr. Alexander.

Mr. ALEXANDER. Adobe believes that a legislated DRM standard will kill the market and would be bad and is not supportive of that legislation.

Mr. COBLE. So do you answer no?

Mr. ALEXANDER. No.

Mr. COBLE. Yeah. Okay.

Mr. Jacobs.

Mr. JACOBS. In the interest of time, SunnComm believes essentially what Mr. Poole just said at Microsoft. So we will take Microsoft's position in the interest of time and say no.

Mr. COBLE. I don't want to put you all in a straitjacket.

Mr. JACOBS. No. That is fine.

Mr. COBLE. If you want to elaborate on this.

Mr. JACOBS. No. I believe that the interest of creating solutions would be best created by the private sector, and we believe that.

Mr. COBLE. Thank you, sir.

Mr. Hausmann.

Mr. HAUSMANN. CenterSpan's answer is no, sir, and for two very simple reasons. The first is that the content owners need to decide what DRM technology they are comfortable with, and there is not a uniform opinion on that. And secondly, and probably even more importantly for this Committee, is the fact that consumers need to be offered a very easy, no-brainer user friendly DRM interface, and all of them are very different and provide different levels of consumer usability.

Mr. COBLE. Thank you, gentlemen. I am sorry. For you, Mr. Poole. My good friend and fellow bluegrass aficionado Richard Bates of Disney—I am not sure whether Richard is still with us or not, but Richard sent me an e-mail——

Pardon? Is he here? I knew he was here earlier. A little notoriety for you, Richard. But Richard sent me an e-mail recently describing the piracy of some of this summer's biggest theatrical movies, even prior to their release to the public. Now, is there any way that DRM technology that either your company, Mr. Poole, or another vendor offer would prevent or limit this type of piracy?

Mr. POOLE. Well, if that content was pirated before it was released to the public, that means that it probably was intercepted maybe during the production process or manufacturing process while still under Disney's control, and this is a significant problem for Hollywood and the software industry as well. We have the same problem with manufacturing of new copies of Office or Windows, showing up and being part of the same way.

So I think the only way that technology can protect that is to ensure obviously security of the physical property, the content, while it is in production and making sure it doesn't fall off the back of any trucks, digital or otherwise, number one. And number two is then to protect the content when it is released, using a DRM technology such as that made by us and others.

But there will always be leaks in the system, and our position is very clear that we can't stop piracy, nor can anybody else. If we develop a legitimate marketplace for people to get the content they want and it is easy and it is affordable and it is convenient and meets needs, consumers will go there.

Mr. COBLE. Anyone else want to weigh in on this? Mr. Jacobs?

Mr. JACOBS. There is no DRM solution that will stop piracy. That is SunnComm's position, because all it takes is the escape of the original material just one time to be loaded on to a peer-to-peer file sharing network, and have a hundred million—have a million copies available by the next morning to people who are——

Mr. COBLE. Mr. Alexander—Hausmann.

Mr. HAUSMANN. Yes. I agree with my colleagues that there is no DRM today that any of us believe that eventually—and I emphasize eventually—could not be hacked. I think what we ought to be focusing on in conjunction with DRM technology is a legitimate entertainment service offering to the consumer, because if there is a very low-cost highly valuable consumer entertainment service where lots of content is available, I think all of us in this room would agree that most people would try to do the right thing, who try to do their best, would probably choose to buy legitimate content as opposed to buy pirated content.

Mr. COBLE. I see my red light appears. Mr. Alexander, I will get you the next round. Hold your thought. I think, folks, we are going to try to do a second round here. I think that this warrants a second round. So I am now pleased to recognize Mr. Berman for 5 minutes.

Mr. BERMAN. Well, thank you very much, Mr. Chairman, and your questions of this panel appeared—their answers have thrown me sort of off track. So instead of getting into areas which maybe I will try to get into them the second round, I would like to just pursue a little bit your responses. Because there is one way to deal with the problems of information, pirated information that is sold without the DRM protection, and it would be, or at least in concept could be a tech mandate. In other words, if—to be the devil's advocate, and if siding with Richard Bates is—if he is the devil, then—for purposes just of this issue, because I am certainly uncertain on the wisdom of going that approach—but given that something has come into the market without DRM, given what I understand to be the law regarding over the air television broadcasts, where encryption is prohibited, given some of these problems of piracy, of videos shot in theaters or things stolen from exhibitors or inside guys getting paid off to take it outside, at least in theory, why wouldn't a tech mandate plug up those holes in the system without in any way trying to discourage you from doing what you are doing? In other words, in dealing with the computer or consumer electronics equipment that is utilized to ultimately exhibit them. Any of you.

Mr. POOLE. If I may address your question, I believe the software industry, as you probably are aware, is a significant victim of piracy as well, the BSA figures quoted being larger than $12 billion per year, and some believe that is grossly underestimated. If there were a silver bullet to stop digital piracy, we would have used it. I don't think that any of us in the software or frankly in the tech industry believe that there is anything that can be mandated given the technology as we know it or where we see it going in the foreseeable future to, as you say, you know, plug the hole, to solve the problem after the content has been released or pirated, whether it is via a Handycam in a movie theater or a CD master being stolen out of a CD printing plant in China.

Mr. BERMAN. So what you are saying really is we could pass that Senate legislation, seek to implement it, and in the end it will still go on; it will be—apart from whether it is wise, it won't be effective?

Mr. POOLE. I believe that ultimately relative to the technology that we understand today and from reading the academic literature in the field, speaking with colleagues in our research organization and other places, I believe that there is no known practical means for trying to stop the playback of what is deemed to be pirated content from a technical perspective.

Mr. BERMAN. Then how come the DVD standard seems to have worked to prevent the rampant copying of DVDs?

Mr. POOLE. So I think we are talking about two separate things. In the DVD protection, we are 100 percent believers in that.

Mr. BERMAN. No, we are not talking about two different things. We are talking about the same thing. One is voluntary and one is sort of Government mandated, but somewhere for 5 years a whole industry complying with a standard has developed, sold 30 million machines, that has a standard which has allowed no copying. We can get into issues about fair use and some of the—in the next round, but so far that has been a fairly effective encryption mechanism.

Mr. POOLE. Well, let me address again—I think there are two separate points to look at. The DVD system has been hacked. That has been widely publicized. And thanks to the DMCA, the hacks that are applied to DVD can actually be subdued and attacked by, you know, lawful means. So that is number one. The DVD system can be broken. However, it does, as you state, protect content while it is in the secure format of the DVD and while no hacking technologies apply.

The issue of content coming off of a Handycam in a theater or falling off the back of a truck in Hollywood, that stuff has never been protected. So it is let out into the wild, as they say, in an unsecure format. It is not in a DVD secure format, and trying to capture it is hard.

Mr. BERMAN. Well, no. Again, I have got reservations about—I don't know about the wisdom of this approach, but I am just trying to deal with at least the theoretical argument here. If you had a law which said every computer and every consumer electronic device sold in the United States had a gismo on it that said don't take it, why wouldn't that stolen item be blocked?

Mr. ALEXANDER. Congressman, I am pleased to let the honorable gentleman from Microsoft continue to take bullets, but I will jump in from an eBook perspective. There is an estimated 8,000 pirated eBooks online today. The vast majority of these were taken from a print copy of the original book; in other words, just as someone sits in a movie theater with a Handycam and records a movie, someone is busting the spine, scanning it in, taking the time to clean it up and then make it available.

I think what we are talking about here are two important distinctions. One is sort of process; in other words, before it is commercially made available in a protected format. And the other is prerelease of that content. With respect to the prerelease, which was the Chairman's premise, I think that those get back to the security measures that any company needs to take to protect its intellectual property. I know Adobe has very rigorous methods internally to protect its software from being prereleased.

[3:15 p.m.]

Mr. ALEXANDER. I think what we need to focus on here and what this discussion is about is digital rights management applied to content that is intentionally released into the market to be sold as digital products or digital works. And so I think that is where we need to focus the conversation on, not on the circumvention that is going to happen of an analog product or the analog hole.

Mr. COBLE. The gentleman's time has expired. The gentleman from Virginia, Mr. Goodlatte.

Mr. GOODLATTE. Thank you, Mr. Chairman. I want to thank you for holding this hearing on this very important subject that I have a very strong interest in. As I understand it, there are cooperative talks underway among the information technology, consumer electronics, and movie industry to create a so-called broadcast flag and a plug, the plug that is known as the analog hole. We understand that these meetings have been bearing some fruit; at least that was reported widely in the media today, and that is a credit to all of the companies involved.

And I direct this question to you, Mr. Poole, because that includes Microsoft. But let me ask you this: To my mind, the most serious problem we have is the avalanche of copyrighted works that are disseminated without authorization over the Internet on peer-to-peer or related networks. Indeed, the Los Angeles Times reported, and I think the Ranking Member Mr. Conyers noted, that over 1 million bootleg copies of Star Wars were downloaded even before the film had opened. I think that is wrong and it is unacceptable. And I wonder from your standpoint, if your company is involved in discussions along these lines and what is your sense of when meetings could start on peer-to-peer piracy?

Mr. POOLE. Let me start by saying that the peer-to-peer problem can be looked at from either a half-empty or half-full perspective, and I think the half-empty part is pretty clear. Piracy on peer-to-peer networks is not a good thing.

Let me step to the half-full side for a moment. What you see there is incredible consumer excitement about participating in a digital economy and getting the convenience in value of having a movie they can download or stream over the Internet on demand, watch on their laptop computer on the airplane, music they can take jogging with them. That is indicative of the American and, in fact, the worldwide public being very excited about these technologies and demanding to get their content in this digital form.

And I think Mr. Berman looked at the importance of us making sure we do not preclude consumers from doing really what they legitimately should be able to do with this content.

So relative to the peer-to-peer problem, what I see is that we need to offer technologies in the marketplace, which we and many others in the industry have been and will continue to do, to help the content industry fulfill this demand such that the pirate market that gets developed around peer-to-peer nets can be reasonably replaced by a legitimate market, one that offers them movies over Entertainer.com or CinemaNow.com that they can get without having to drive down to Blockbuster, and lets them get that catalog of music that they are very interested in from their college days and maybe they can't buy in a record store.

So the systems are there in place. And in fact, the CenterSpan Network uses peer-to-peer technologies, and I think they should speak to this some more, to help meet that consumer demand and do it using a legitimate DRM-protected, secured, distribution technology.

Mr. GOODLATTE. Mr. Alexander, or anybody else want to comment on that?

Mr. JACOBS. Well, I think speaking for SunnComm, I think that there has become a technology sophistication in the marketplace among users where it is not just the domain of business to invent the technology and the users to use the technology. And I think when you talk about altering computers in order to accommodate protection models, I think there would immediately be a ground swell of sentiment that would look to defeat those models based on the access of technology that everyone has nowadays. That would be my concern with altering—when you mentioned altering the computer to not play—to play nothing except licensed.

Mr. GOODLATTE. My time is running out. What would you offer as an alternative to that?

Mr. JACOBS. Well, it depends. We weren't going to talk about peer-to-peer networking in this session. I wanted to a little bit, because I thought there existed a model for at least music peer-to-peer networking, which is something that is incredibly seductive for the millions of citizens who are using it, and that is to create a TV or radio model out of peer-to-peer music. So likewise you would—people would continue to have free access to music through peer-to-peer technology, but it would be the sponsors and advertisers who are directing messages to those consumers who would end up paying for that music in an equitable and fair way to the artist.

Mr. GOODLATTE. Would this be downloadable or streamed?

Mr. JACOBS. This would all be downloadable.

Mr. GOODLATTE. There is a difference between that and broadcast, because those things aren't as easily replicable. Certainly in the past, you haven't produced perfect copies that could then be distributed to an unlimited number of other people, and the advertising isn't going to flow with the download.

Mr. JACOBS. The advertising would flow in the form of banner advertising that would be broadcast individually to each and every person using that service. And that banner advertising would be very lucrative because their numbers are very large, would be directed toward the needs of each one of those consumers, as opposed to a shotgun kind of advertising we see on television or radio. Therefore, the amount per user that would be gotten from the advertiser in revenue would far exceed that of a—for instance, a television viewer.

Mr. GOODLATTE. What happens to the product once it is in the possession of a consumer?

Mr. JACOBS. The product is a MP3 product or WMA product. It is compressed and therefore less of a quality than a CD quality. And it would reside in the computer of the user, who would be able to either play it for a limited period of time, according to a DRM solution, or forever.

Mr. GOODLATTE. You are not opposed to a DRM solution.

Mr. JACOBS. Absolutely not. I think a DRM solution could account to the record companies, publishers, and artists the exact number of downloads that were exhibited on a day-to-day, hour-by-hour basis, and they could gain a confidence in those numbers so much so that advertisers would be willing, through the effectiveness of pinpoint advertising to millions of users. I think that model works. It worked for TV, it worked for radio, and I think it would work for music.

It won't work for movies. Movies are staged-release product, and there are a million other reasons why it won't work for movies. But for music you don't need to turn millions of people into digital shoplifters in order to solve this problem. You can give them the music they want and find a way to pay for it, and I think the model is right there. And I would be willing to talk to anybody about that.

Mr. GOODLATTE. My time is expired.

Mr. COBLE. We will have a second round. The gentlelady from California, Ms. Lofgren.

Ms. LOFGREN. Thank you, Mr. Chairman, and thank you for this hearing. I had mentioned to both the Chairman and Ranking Member that I hoped we would have consumer advocates on the panel, but I understand the full Committee rules limit us to only four witnesses. These have been excellent witnesses, and I would hope we could have another set of hearings that would broaden the perspective to those who could not be present here today, because I think this is an enormously important subject and I think we will learn much by listening to the many voices on the subject, including voices I might not agree with.

I do think that there are some truths that are going to occur no matter what the Government does. And one of those is that there will be file sharing. There will be digital distribution of content. The Internet will not go away. And if there is a technology mandate, it will quickly be circumvented by smart techies.

So, having said those truths, the question is, you know, what can we do to protect the legitimate right of developers of content to be compensated? Because if we do not succeed in that, we will do great damage to our economy and to fairness for those who have put in effort and deserve to be paid for their effort and have that right that has been recognized for many, many years.

Thinking back—and Mr. Berman and I had a chance to gossip and do a trip down memory row on the hearings we have had on the DMCA a number of years ago, and he reminded me of something that I had forgotten: that during those hearings and markup I pointed out we would have technology, and that technology would be defeated, and then there would be a new set of technology protections, and that would be defeated, and it would be a constant chase. And I think, in fact, that is what has occurred.

And the fact that we have different technologies displayed here—and there are many more—really does show that the marketplace is fully capable of coming up with protection schemes and systems. The question is whether those schemes and systems are going to work in the marketplace and also whether they are going to be respectful to the first amendment. And I think those are two separate issues. Certainly the underlying basis of fair use is the first amendment, and we can never delegate respect for the first amendment to the marketplace alone. And I am questioning what further efforts we might need to make to protect those rights.

And then there is a second issue, which is what consumers expect. And I remember in DMCA asking one time, shouldn't we establish what it is that people bought? And people looked at me as kind of a crazy question, but what do people buy when they buy digital content? Do they buy 20 minutes? Do they buy it like a CD? What is the expectation of what people get?

And I think that is very much the problem we are facing here. If we don't get it right—and by "we" I don't mean the Congress, but we as a society—we will end up with a massive problem. When the pirates have the only business model that works, then the legitimate providers will be disadvantaged and that will be wrong for all of us.

So if I could, I was very taken, Mr. Hausmann, by the suggestions in your testimony on page 9 where you really outline the need for balance between protection of the copyright owners, but also to deal with the users, and suggest that we might have a role—we, being the Congress, to state what reasonable and legitimate uses consumers may make of lawfully acquired digital media. And it is my sense if we did that, certainly the private sector is capable of creating any technology to make sure that those rights and only those rights are protected.

What would you suggest are some of the affirmative rights or expectations that consumers should have in the area of digital content, be it software or entertainment?

Mr. HAUSMANN. Well, I think it is different depending upon the content. And first of all, let me say this is a hearing focused on DRM technology. It is CenterSpan's humble opinion that today, both in Windows Media as well as the other DRMs, the leading DRMs that are out there for not just rich media but nonrich media as well, are in fact capable of supporting exactly what you have pointed out and that is to define a set of rules for consumer—their use.

And I guess the way we look at it is, I think the Congress would be better off focusing on finally providing a statutory and affirmative definition of what fair use is in order for online subscription and pay per services, to be able to know up front what value they really can offer the consumer on a permanent pay per download; for example, how many portable devices or no limitation to portable devices that it should be allowed to move to.

We have all been conditioned for quite awhile. In fact the entertainment industry has spent the better part of the last 50 years conditioning us all as consumers that on a quid pro quo, we are paying value, and in return we are getting content, and we are allowed to use that within certain parameters. Again with respect to DRMs, those parameters could be programmed into those DRMs today. And we think if there was better visibility into that, then the entire industry would know what the value proposition would be to consumers.

Ms. LOFGREN. My time has expired and we will have a second round, and I thank you very much.

Mr. COBLE. The gentleman from Utah.

Mr. CANNON. Thank you, Mr. Chairman, and I want to thank the panelists for being here today. We heard a few moments ago about a million copies of Star Wars had been bootlegged before the release. Are any of you aware of any studies that have been done on that as to whether that helped or hurt the revenues of Star Wars? Glad to hear a little chuckle from the audience, because I suspect it may have helped.

Mr. POOLE. Entirely possible.

Mr. CANNON. My kids are coming home and saying, you know, "Hey, Dad, we can download Spider Man." and before I could give an answer and give them a lecture on the propriety of that, another kid said, "Yeah, but it just comes up in a little tiny screen and it is jerky." I actually suspect that there may have been some improved revenue when you got the real thing.

Today, in USA Today, there is a cover story article, "Any Way You Spin It, the Music Biz is in Trouble." and for the first time in 10 years, there has been an actual decline in sales of music. Has four topic headings: Piracy, Digital Duplication, has Become a Burning Issue; Radio and the Request Line, the Big Challenge, Keeping Boomers Listening; The Thrill is Gone, Just Where is the Good Original Music These Days; Money for Nothing, 16, $18 for a CD, sticker shock sets in.

My kids and everybody now—sort of becoming an article of faith with people who care about music that you pay 16, $18, $12 for a CD, and you get one song that you like and the rest of them you really don't, and then you find out you got one of those 20 million CDs out there that have already been protected—fortunately, I guess, we got a solution to that protection with the felt tip pen. But there is a lot of frustration.

Is that a solution? Frankly, you know, when people don't have the opportunity to know in advance what they are buying and then they get caught by surprise when they are trying to burn or rip or whatever else, it is tough. It seems to me we have talked about, you have with DVDs a DRM process that protects, and that creates sort of a threshold. And I am going to ask opinions of the panel members on this question when I get to it. You have the DMCA which penalizes people for violating the law. And it seems to me that those two things are sort of helpful in the process of actually getting value to people who produce content.

We talked about peer-to-peer systems and music in particular. And it seems to me that Napster has a point, and who knows where we are headed from here, but in their peer-to-peer system they have the ability to do what I would call "microbeam." It is a very small beam. So instead of just paying for content with advertising which is pinpointed, based upon the knowledge of the user, you have the ability to deduct a small amount from a deposited sum and, therefore, a serious possibility of micropayments.

Is it possible that between being clear on the law and creating penalties for people and increasing—will technology increase such that people will have an opportunity to pay, especially if the price comes down to reflect the value that goes to the artists and the creators and the other people who put value in the system, a system whereby we can make information available, all kinds of information, TV, videos, music, medical records, that sort of thing, available worldwide?

Let me point out that about a year-and-a-half ago we were sitting around in my office in the afternoon. It was about 2 o'clock in the morning in Afghanistan. This is long before 9/11, and you used to be able to go to Napster and figure out who was on line. So we pulled up Afghanistan, and 2 o'clock in the morning Afghanistan time, they had 278 people online downloading music. So I see this sort of as a worldwide opportunity where America can take the lead.

I am little concerned about what—that the wrong legislative solution would do. What is the possibility for systems that rely on prohibition punishment and opportunity to pay perhaps a reasonable fee?

And, Mr. Poole, we will start with you.

Mr. POOLE. I think you touched on many of the problems that the music industry has faced here. And I believe that the systems are in place that, as you say, offer the ability to both distribute the content that have prohibitions, that can be put in place for people that circumvent the security mechanisms, and can actually bring the content in a reasonable price and a reasonable form that consumers want.

And to illustrate this, I want to tell a quick tale of two music services. One is called Music net and one called pressplay. And this touches on the consumer rights question because one of those services, I think they got smart and they said we are going to let our customers burn a certain number of songs to a CD so they can play them in their car or while at the health club. The other service did not. If you are going to read all the press articles about these, what you find out is that the guys that respected what they thought the consumer usage scenario would be—let me download a bunch of music, collect it on my machine and I pay a reasonable price per month, and I can burn some of that to a CD and take it with me—those guys are doing pretty well in the press. And I think that the guys that do not have that offered to the customers are doing less well.

So that is a case where I think the market is helping to define—the technologies are there, the customer and the demands are there, we have determined, and the market is now going to help them figure out how to line up the rights, the value, and the price and make it a product that works. And I think it is entirely possible and it can thrive.

Mr. CANNON. Mr. Chairman, since we are going to have another round, I will let the rest of the panel go. Let me point out the really nice thing about pressplay is the price that music has plummeted, so we are not getting into an unreasonable price per track. I yield back.

Mr. COBLE. Thank you, Mr. Cannon, and let us hear from Mr. Boucher from Virginia before we go vote.

Mr. BOUCHER. Thank you very much, Mr. Chairman. I want to join in the call that was made by my colleague from California, Ms. Lofgren, that we continue our conversation on this subject through at least one additional hearing, and that at that additional hearing we invite representatives of the consumer interest to be present and express their views.I think that is a valuable part of this conversation which has not been entirely reflected during the course of our hearing today.

I want to return in a slightly different manner to the subject that was opened by the Chairman in his first question, and that is what the role of Government is with respect to DRM technology. Under the DMCA of 1998, DRM technologies enjoyed kind of a first stage of legal protection. It becomes a crime under Federal law to circumvent a technological protection measure which guards access to a copyrighted work. Doesn't matter why you circumvent, but just the act of circumvention is a crime.

It is also a crime under that statute to track in a circumvention device. So if you publish information about how to circumvent a technological protection measure, you are also committing a crime, as Professor Felton found out.

Now, many people are concerned that these provisions of the 1998 law are complicit in the erosion of fair use rights, because they enable the content owner, through the application of technology that then enjoys legal protection, to make impossible doing what consumers have historically done in making copies at home, for example, which the copy protection technology on CDs would prevent by being able to transfer material that they have lawfully acquired among the various digital devices that they have in their home environment. Depending on what the DRM itself specifies, a lot of limits can be placed on that transferability.

I really have two questions of this panel. The first one is do you have any of those concerns about the DMCA? I would welcome your comments about the validity of those complaints or, if it is your view, the lack of validity of those complaints. And my second question to you is whether you think there are ever any circumstances under which Congress should then take the next step, and some may think I am going to say amend the DMCA. The next step would be moving in the other direction, and that is actually adding another level of protection for a DRM. The next level of protection would be to require that technologies such as receivers or players or recorders recognize DRM, digital rights management technologies, and respond to them.

Now such a provision would, in effect, reverse the no mandate language that is contained in the DMCA. This is essentially what the bill introduced by Senator Hollings would do. I have heard you say you don't support that, and I was pleased to hear that answer. But falling short of the broad panoply of new requirements that would be contained in a Hollings kind of bill, do you ever see any circumstances under which the Government should take the step of requiring that devices respond to digital rights management technology?

For example, I suspect the Congress is going to be presented pretty shortly with a legislative proposal to implement what we call the 5(c) agreement, where the major recording companies and the motion picture studios have now come to an agreement for plugging the analog hole and inserting a broadcast flag. This is kind of a lesser level of next level of protection than what Senator Hollings recommends, but it is another level nonetheless; it is another role for Government.

And I think this is really the overarching question that we need to be focusing on: What is the role of Government? What should we be doing in terms of the level that has already been provided for DRM and potentially future levels of Government protection? I know it is a broad question and it has a couple of components and I would welcome your responses.

Mr. ALEXANDER. Adobe believes that Congress should find the right balance in the DMCA, and doesn't believe that any additional legislation is necessary. But I will also tell you that Adobe actively supports this concept of a white hat security expert to expose flaws in our security system. We think that has value, even if it embarrasses our company, because it gives us the ability to fix those problems; and that wasn't done last summer.

Mr. BOUCHER. Would you support amending the DMCA to really make that available?

Mr. ALEXANDER. Sir, I am not a lawyer, but I believe that Adobe believes that DMCA covers that provision.

Mr. BOUCHER. Well, it really didn't, or Professor Felton would have never had this problem. Well, this is a debate for another time.

Mr. ALEXANDER. I would like to leave off there to answer your first question.

Mr. COBLE. If the gentleman from Virginia would suspend, why don't we break and go vote and then we have—we have two votes. But I say there has been some concern about the consumer not being represented here. I think you all speak for the honest consumers anyway. And I say to my colleagues on this panel, the record will stay open for a week. So anyone—you don't need a special visa to submit records or statements for our record. So I urge you all, if you have anyone who happens not to be here today and you want him or her to be heard—now we may have a subsequent hearing, we may not, because even though we are in June, time is elapsing very quickly.

So having said that, why don't you all rest easy and we will go vote and return imminently. I am thinking probably within 20-25 minutes.

[Recess.]

Mr. COBLE. We will resume our hearing. The gentleman from Virginia put his question to the panel prior to the recess. I think, Mr. Alexander, were you finished with your response to Mr. Boucher's question? If not, finish. And the rest of you all can respond accordingly.

Mr. ALEXANDER. The additional point I just wanted to make was that we are focused on the sort of an implied understanding that DRM equates to restrictions. And I want to make the point I think we are talking about DRM is the tremendous opportunity that DRM creates in the marketplace.

Comment was made about the ability to buy a CD and having to buy 8 or 9 or 10 songs to get the one that you want. I think there are plenty of examples in the eBook industry where DRM has created new models for consumers to buy partial rights to a book at more favorable prices. Case in point is an example from RosettaBooks last year that made an Agatha Christie title available in two forms, both as a WPFE book. One was available for $3.95 and you could use it for 10 hours, and the other was the full version of the book which you could buy for $15.

Here is an example where a consumer can buy exactly what they want. If they just want to read the book and discard it, they can buy it for a much lower price. If they want to buy the book and own it and keep it forever on a digital bookshelf, they can pay a little extra to do that.

But these new business models are created by digital rights management, and that is what we are so excited about as a market opportunity.

Mr. POOLE. I think I will try to address two of the points you made. One, I think, is the question of should Congress revisit the DMCA, and is it the right time and are there things that were either overlooked or not addressed properly from a consumer rights perspective?

I think overall our view, as I said earlier, the DMCA was a very good piece of legislation. We think it is still rather early to tell whether it is time to revisit that or not. I think there is clear evidence of it doing some very good and productive and procompetitive things in the marketplace that are helping consumers. And, again, an example of that is the DVD and the success of the DVD, with the DVD being one of the fastest growing, if not the fastest growing, ever, consumer electronic devices in homes, and sales of DVD disks representing substantial portions of many motion picture studio revenues. You can see there is a device that is DMCA sanctioned, that is protected, and that is meeting the needs of consumers, clearly, because they are voting with their wallets. So that is one point there.

The other question is about is it appropriate to mandate technology in this case? And I think you alluded to things coming along. And I think we stand by a view that it is not the right time to mandate a single technology for solving any of the problems that have been identified and discussed today. The mandate of a single technology would paint a bullseye on the technology, and it would be targeted world over for hacking an attack. And it would probably be hacked and disabled or rendered obsolete before it even got to marketplace. And that means then those who carry that technology would carry the burden and the cost of it, and it would not accomplish the goals for which it was intended.

Mr. BOUCHER. I assume these comments are relevant to the proposal that the 5(c) studio agreement which will be coming forward perhaps would be characterized this way?

Mr. POOLE. That could be one possibility, and that one has been proposed as a technology that could be used to implement some of the broadcast flag-triggered protection within the BPDG discussion. So that is our view on those two areas.

Mr. BOUCHER. Thank you, Mr. Poole. Briefly Mr. Jacobs, Mr. Hausmann.

Mr. JACOBS. Just briefly, SunnComm would be in favor of the formation of a white hat security panel, as you brought up earlier. I think that would uncover—do well to uncover a lot of the weaknesses in the system and extend a flavor of neutrality to the whole process. I think that would be a really good idea.

Mr. BOUCHER. Are you concerned about the possible erosion of fair use rights through the application of the DMCAs that existed?

Mr. JACOBS. Absolutely. Our company has always been trying to balance fair use with content protection. And as you can see, the history of SunnComm has started from let us lock down the tracks of the CD and let no one make any copies, ala pre-Charlie Pride, to where now we include digitially managed files on the CD copy—the hard CD copy itself, so that people can lift the music off onto their PCs and make copies—make a limited amount of copies according to the wishes of the recording industry or the record company.

Mr. BOUCHER. Thank you, Mr. Jacobs. Mr. Hausmann.

Mr. HAUSMANN. Thank you, Congressman. I really don't have anything else to add. I think my colleagues have made adequate statement on that.

Mr. BOUCHER. Thank you very much, Mr. Chairman. I appreciate your indulgence.

Mr. COBLE. Thank you, Mr. Boucher. We are still on our first round, and we have been joined by the gentleman from California, Mr. Issa. Do you have any questions at this juncture?

Mr. ISSA. Just a quick one. Knowing that most of the questions that could possibly be asked have already been asked, but germane to the direction we are trying to go as a body here, the industry is trying to go in getting to solutions that allow for reasonable fair use and at the same time, if you will, respect the intellectual property holder, probably most of you are aware that those who were involved in the DVD design have been sued for antitrust violation for the pure matter of everything it took to come up with multiple zones in the protection process. Do you believe that either through this Subcommittee, or the Committee as a whole on antitrust, needs to consider or look into carving out specific ability for industries and companies to work together to try to solve some of these problems, without being in the same kind of jeopardy as those who worked on DVD, or generally would that be a good thing for us to look into as a Committee?

Mr. HAUSMANN. Congressman, I will take a stab at that. I think that is an interesting question, and that is the first time I heard it raised by anyone. And if I understand your question, it is whether there ought to be a specific carve-out in the antitrust rules with respect to certain members of an industry group trying to work together to develop and promote some type of technology or capability in order to move the entire industry further ahead from both the industry side as well as the consumer side. Is that your question?

Mr. ISSA. Exactly. And my question wouldn't have happened before the reality of litigation of people who did exactly that; because obviously when you do that, you are also balancing profitability, protection of a profit source, and that easily falls astray of the question of was there big corporate collusion that somehow made more money for some group. And I didn't have the sensitivity to the level a few months ago that I do today.

Mr. HAUSMANN. I am not an antitrust lawyer, but I will tell you from front line experience in talking with and negotiating with the five major studios, specifically showing them the CenterSpan C-Star-One technology and having them explain to us what their plans are, they will not even sit in the same room together to have a discussion, and their lawyers are present at all time.

And I guess what I would suggest is from a practical perspective, it makes it almost impossible to try to reach a consensus on a specific technology or a distribution channel like C-Star-One. So I guess in theory, yes, a carve-out would be helpful.

That said, I think everyone in this room clearly understands what the risks of that may or may not be, and those risks would have to be weighed and balanced against such a carve-out.

Mr. POOLE. I don't think Microsoft is in a position to make any particular comments about antitrust laws at this moment, but I can——

Mr. ISSA. Does Microsoft have some experience that would cause them to believe that when you negotiate or discuss things with other companies in an industry and it is for the public good, that there should be some reasonable protection for your company?

Mr. POOLE. What I can say is we do work with a variety of content companies, technology companies, on standards-related activity, whether they be ad hoc or formally sanctioned. And I believe it is vital to the success of the technology industry, the content industry, and to delivering what clearly consumers demand: that these activities be able to happen effectively with some level of certainty and expediently. And if the antitrust laws get in the way of that, maybe that is something you should look into. But we think it going to be increasingly important.

And the work in the broadcast protection discussion group that just transpired over the past 6 months is an example of a good effort across the industry to try to understand issues and work toward common solutions. We need to do more of this, not less.

Mr. ISSA. Thank you, . Chairman. That was my only original question left.

Mr. COBLE. We will start our second round now. And ladies and gentlemen, fore—in the event that I forget to mention it to you, I want to advise you that a statement on digital piracy, jointly submitted by Chairman Sensenbrenner and Ranking Member Conyers, will be available at the press table as you all leave.

Let us start our second round now. Mr. Alexander, you are the only one who didn't get to insert your oars into the water when I put the question to Mr. Poole about whether or not there is any DRM technology that could have prevented what occurred to Mr. Bates. Did you want to weigh in on that? Richard Bates e-mailed me that piracy had been committed, and I think you all agreed that there is no foolproof system. Do you concur with that?

Mr. ALEXANDER. I thought I weighed in on that. I agree there is no foolproof system, and will be both reactionary and proactive as we go forward in trying to plug holes that are discovered as we try to roll out new technologies that create new opportunities.

Mr. COBLE. Mr. Poole, let me come out at you from a secure and a copyright angle. Last year, I think you all at Microsoft announced that it was making computer security a top priority at the company. It was explained if the situation arose where the operating system was opened and the source code revealed to the public, it would make it easier for hackers to jeopardize security, on the one hand. Would not the same be true of hacking and piracy if the source code was revealed to those who wanted to simply undermine DRM security and engage in hacking and piracy?

Mr. POOLE. What you state is absolutely correct. And it is vitally important in this cloak-and-dagger game that we all play with the hackers and pirates of the world, that you be able to retain under trade secret protection the technological measures that are used to secure the digital assets, whether that is, again, a film studio, a lawyer, or a consumer. And if the blueprints for how those assets are secured were printed and available to the public, obviously it would be much easier for people to break in and take them, and that is something we would certainly oppose and would find to be a great loss to both consumers' privacy as well as the intellectual property assets that we all strive to protect.

Mr. COBLE. You know, gentlemen, I will conclude my questioning with a statement. A colleague of mine recently came to me and expressed concern that he was very anxious and uneasy because he feared that the public acceptance of the antipiracy provision of DMCA had not been well received by the public, and he was all ginned up and antsy about that. And I am not convinced, folks, that it has been that ill received. There is a segment of society who rejects it, and they are very vocal and that squeaky wheel is the one you hear. But on balance, I think the public has pretty well embraced for the most part DMCA.

I have been told there are some prosecutors who fear, or may be reluctant to initiate prosecution because they fear it has not been well accepted. But I don't think we in the Congress should be tentative and avoid pursuing antipiracy legislation just because there may be some people out there who don't like DMCA. There is a lot of legislation folks don't like, and I don't think that that should deter us from doing our job. And I will admit I am subjectively involved, because Mr. Berman and I worked very hard on this, as did the others. And I think on balance, it is a good piece of legislation that I think will serve us well.

I am pleased to recognize the gentleman from California.

Mr. BERMAN. Thank you, Mr. Chairman, and I agree with you. In the context of what the purpose of this hearing is supposed to be, which is to learn about—and I think it has been very helpful to do so—about these digital rights management technologies and different formats, I mean there are two points that I think should be made. One is as a result of the existence of these technologies, content owners have been willing to provide content digitally and online in a fashion that, without these technologies, they might well not have done.

So, one, that the consumer is better off because of what you are doing, not worse off because of what you are doing. Secondly, that there is—I mean, the story of AdobeBooks and your eBooks—Adobe and your eBooks and the changes you made to try and meet marketplace problems with your original distribution mechanisms are an example of how, in the end, consumers are further served by virtue of their market power and peoples' desire to get interested in what you have to sell and your efforts to try and find out how those work.

I mean, this whole notion of the constitutional relationship to—I mean, there is—this connection between first amendment and fair use is important. I am not sure that the Founding Fathers contemplated a copy for every beach house, but I do want to ask about Mr. Hausmann's suggestion with regard to legislating in this area of fair use. I almost shudder to think of the markup of such a piece of legislation. My guess is that Mr. Poole might have a very different notion of how many copies of a $1,500 piece of business software the consumer should have a right to copy than the most recent CD version of a record.

I mean, this gets exceedingly complicated. And I am wondering, by setting—I wonder if you won't find out that we will be further limiting fair use by virtue of trying to codify it than we might be getting through the case-by-case process that has stood up over a long period of time in terms of figuring out that right.

Are you suggesting we somehow eliminate the existing fair use statute? Tell us why you are proposing this as a solution here.

Mr. HAUSMANN. Well, I want to make clear that we are not here stating that Congress should in fact pass legislation to do this. We are here to suggest that it would be helpful, perhaps, if you take a look at it, because what we are hearing in the marketplace is as follows: When we have been in discussions and negotiations with the major labels and the independent labels, the major studios, the independent studios, everybody has a different idea or notion of what fair use is. In fact, some of them won't even state that there is such a thing as fair use. Not that they say there isn't a right, but they will never use the words "fair use," which I found fairly interesting. And that is not a value judgment one way or the other on them.

The point is when a company such as CenterSpan, that is trying to aggregate content to create a virtual warehouse, low-cost distribution channel, and you have 10 majors on both sides of the video and the music side of the aisle as well as the independents, all having a different notion of what fair use is, somebody has to be able to write source code to support in a DRM all these different potential possible rights. And without uniformity, how can you serve up a uniform value proposition to the consumer?

So if what you are looking at is trying to figure out a way to help all of us as an industry clear gates—I am not saying this is the answer, but it is certainly a consideration. If everyone in the industry, especially the entertainment industry as opposed to perhaps business software—because I think you can certainly make a distinction there—if we all have the same understanding of what those rights are, then we are all in the position to create a uniform value proposition to the consumer.

Mr. BERMAN. Any other reactions to the suggestion?

Mr. POOLE. I would add, as we just discussed, there are different rights appropriate for different types of content. So even, for example, within Microsoft's own software, our license grants vary from product to product.

Mr. POOLE. And a good example is Office, which we license for use on a desktop computer and on a notebook. Well, that is because our business customers fly around a lot. They travel. It makes sense that that is how the license works. However, that may not be an appropriate license for AutoDesk, who sells software that goes to professional engineers who really don't work on notebooks, so they want to license it for use on one's desktop.

So I think the concept of fair use—or really what the concept is here is how do you address what your customer needs, and the customer has an unbelievable power in this equation because they vote with their checkbook.

Mr. BERMAN. And if music—if one online music service allows burning and the other one doesn't and it is more successful than the other one——

Mr. POOLE. Market forces prevail.

Mr. BERMAN [continuing]. Somebody may think again in the other service about whether or not to allow burning?

Mr. POOLE. Precisely.

Mr. HAUSMANN. Congressman, that is fair and that is also well said, but the reality of the market is that if you look solely at music subscription services, which Mr. Poole brought up in his analogy today, for example, I should say with PressPlay and MusicNet, there are those of us in the industry that don't believe that a music service in and of itself will be successful without aggregating a tremendous amount of music content, and I think everyone in this room can shake their head yes as a basic consumer and agree with that.

That said, Vivendi Universal wants to launch an entertainment service that is a mix of music, music video, TV broadcast catalog, as well as full motion video. That is a different value proposition. But, again, across the entire industry between film studios, television broadcasts, music, everybody has a different notion of what fair use is. So I agree with you completely. One company may say, well, they will allow a consumer to burn three CDs. Others will say they don't want any burning whatsoever, but that assumes that each label would offer their own service. I am talking about trying to create a mirror image today in the digital distribution channel of the current traditional channel, where you have content owner and provider, you have wholesaler, you have retailer and you have consumer. It is the poor wholesaler and the retailers who are caught in the middle, because they don't know what—there is no uniformity to serve up to a consumer. I think there is uniformity, it seems to most consumers, as to what we want because we all know what that has been for the last 4 years but there isn't uniformity by the content owners or providers and that leads to a complete problem for the wholesalers and the retailers.

So I am not here to tell you I have an answer. I am here to tell you what the problem is we are seeing out in the market, and I think at least considering some type of clarification of what those fair right uses are with respect to entertainment that is within more or less the public domain as opposed to what Mr. Poole has just pointed out, business software that is focused on a single desktop and single use, is appropriate.

Mr. BERMAN. Thank you, Mr. Chairman.

Mr. COBLE. I thank the gentleman. The gentleman from Virginia, Mr. Goodlatte.

Mr. GOODLATTE. Thank you, Mr. Chairman. This has indeed been a fascinating hearing. I want to follow up on the comments of the gentleman from California.

We have some who want the Congress to step in and define how digital rights management will unfold, what the technology—legislation that could lead to dictating what the technology is, what timetable it will be pursued, and I think that is a very unwise track to follow. We have others—Mr. Hausmann has seemed to lend some support—who would want us to define what fair use rights are, other than the fact that they are already defined in case law, and I am not sure that is the correct route to go either.

I understand your frustration in wanting to offer a product in a uniform fashion and certainly the desire of the consumer to have the maximum amount of flexibility with that, but that is not how most other businesses work. We don't dictate to various industries and say you have got to sell your product or make your product available in certain fashions on one side or the other of that equation, and that is what concerns me about both sides of this debate.

It seems to me some consumer groups seem to take the position that digital rights management as a technique is anti-consumer, because DRM necessarily limits consumer choice, but I think that is absolutely backwards. If you do not have flexibility in the marketplace, if you do not have the opportunity for owners of content to find different ways, some of which will be very successful, some of which will fall flat on their face—we have already seen that in the world of music—if you do not have that kind of flexibility, you are going to leave folks with some stark alternatives. They are either going to see their works copied in unlimited fashions, or you are going to see very, very strict restraints on how it is made available in the marketplace, things like encryption, which allows for essentially no digital copying.

I think that the common ground should be found by the various forces in industry working this out, and that is going to lead to a whole variety of different options for consumers, benefits for consumers, that will lead to a variety of ways they can access copyrighted material, with time limits, with a ceiling on the number of copies that can be made, with the opportunity to buy additional features, and so on, kind of like an a la carte menu, and that may not be the most flexible way for you to offer your consumers their product but I think it may well be the best way for this market to sort itself out, and I would welcome all of you commenting on that. Go ahead.

Mr. ALEXANDER. I would just make the observation that I, too, found this to be a helpful hearing. I actually didn't know that I could put XP on two machines, so I appreciate having that explained to me. And that just leads into a more serious point, which is that I agree there is no silver bullet here, but I wonder if a lot of this just couldn't be resolved if we tell the consumer what they can and can't do with digital media in a way that is clear and concise, and I think about, you know, the long standard, you know, end user license agreements they are called, in the software business and Adobe is guilty of these long documents as well, and I think about how clear the Barnes and Noble story is when they told consumers that if you bought the Adobe PDF eBook version of The Year ahead, you could print it and it was clear and we saw the market respond to that in the face of having a print version, an alternative eBook version. They migrated to the Adobe eBook version because they——

Mr. GOODLATTE. Absolutely, but you can do that in the marketplace right now. I don't think Congress needs to change the law.

Mr. ALEXANDER. I am supporting your point to accomplish that. And just to further that, and I will stop, there is a tremendous financial incentive by online retailers to solve this problem. Depending on what customer relationship management statistics you read, it costs Barnes and Noble, Amazon, any online retailer, $13 a telephone call to pick that up and solve that problem for the consumer. So there is an enormous financial incentive to make these clear disclosures to their consumers so that they in essence don't have to take these kind of calls and cause these bad kinds of customer experiences.

Mr. POOLE. So if I can second the comments, I also wholeheartedly agree with your assessment of the situation, that the technologies are there, the flexibility is there, and the demand of the customers will dictate how the policies are set by the copyright owners, by the copyright distributors such that it is a profit-maximizing product at the end. And I think Mr. Alexander here has rubbed my nose a couple times now that his software did something that ours didn't and worked more successfully in the marketplace and, boy, that is going to make us go out there and add a feature. So I think this will apply throughout all digitally distributed products in the economy that really is just at the beginning and that anything that tries to lock down and define a single way, a single method of applying digital rights to digital content would be a mistake.

Mr. GOODLATTE. Mr. Chairman, I didn't direct my comments in response to Mr. Hausmann, so if he could have an opportunity to respond, too, if he chooses to.

Mr. COBLE. Very quickly, Mr. Hausmann, if you will.

Mr. HAUSMANN. Yes. Thank you, sir. I guess I would just close by making sure that we all understand that there is a big difference between a Government-mandated point DRM technology and defining in a statutory fashion what the courts have already defined in a defensive fashion of what fair use means. If fair use is defined, then the question is what DRMs are capable of supporting that, and I think certainly I agree with all of my colleagues, the Government should not mandate any point DRM technology, but, again, I think those of us in the industry, and Lord knows I have been a free marketer my whole life, you know, would to some extent welcome some clarification on the fair use.

Mr. GOODLATTE. Thank you. Mr. Chairman, if I just might add, I don't disagree with that, except to say that fair use is defined in the law today, and the question, to me, before all of us is how we are going to enforce that law and deal with this issue of piracy and allow the marketplace to evolve new methods to deliver products to consumers.

Mr. BERMAN. Would the gentleman just yield on that?

Mr. GOODLATTE. If the Chairman will allow me.

Mr. COBLE. Very well.

Mr. BERMAN. When you say fair use, I mean, we have a law which describes factors which courts look to to determine whether to apply fair use. I mean, we don't define it in terms of the consumer's right to make X copies or——

Mr. GOODLATTE. No, and I don't think we should.

Mr. COBLE. The gentleman's time is expired. The gentlelady from California.

Ms. LOFGREN. Thank you, Mr. Chairman. This has, I think, been a useful hearing, and there are so many issues that are at play here. There are technology issues. There are issues about rights, the rights of copyright holders, as well as the rights for fair use for users, but I think this is also—and we haven't talked about this as much as the other issues. This is also about business models and what is happening in the business models, and that is of interest to us in the Congress, not because we are in business but because if the business models don't work the economy suffers, and I think we have seen that happen in the music arena.

A couple of people have talked about DVDs. You can hack DVDs. You can copy DVDs. I don't know that that has been a large issue yet, because how many copies do you need of, you know, Saturday Night Live. I mean, if you buy right now a DVD, you can copy it, but most people, unless you are a pirate, a commercial pirate, there is not a lot of incentive to do that. And what has really deterred the copy of course of DVDs in my judgment is bandwidth. It takes too long to do it, and so other than 13-year-olds, you know, most people aren't doing that yet, but that is just a matter of time until the bandwidth is there. We are going to have the same issue that we have seen in files that are much smaller and easier to transport.

And so I am wondering, it is true that the marketplace can resolve many of these issues, but I am concerned that they have not been defined in the numbers of years since the DMCA has been adopted. And I was interested, Mr. Hausmann, on your—again, your recommendation that we think about copyright, not necessarily we do the law, but to think about the incentives for publishers as opposed to just copyright and copies. And I think really that is the issue. I mean, if you have got Adobe software that costs a fortune to make, the pirate element is higher than if you have got, you know, almost—if you have got share ware that didn't take that much to make. And so the differential on the fear level is quite different and your willingness to put it out there may be different, and so you don't see—and if you don't have digital, legal digital content available, then you are going to have piracy, because that is the only way to get content, and we have seen that very much in the music industry, and we will see it also in the other forms of entertainment industry if the model is not formulated.

And so I guess the question I have is, is it your view, each of you, that getting at least some definition of what it is people have a right to do with the stuff they buy might invigorate your digital rights management technology, number one, and also encourage the content owners to move forward more vigorously into the digital distribution marketplace?

And whoever wants to start with that answer would be fine.

Mr. HAUSMANN. Well, again very briefly, I would differentiate point DRM technology from your point of fair use and business models, because they are two completely different things. DRM today can support virtually any type of fair use parameters that a content owner, publisher wishes to provide. That said, it is the business model side of the world that is all mixed up, because as I just stated, with all the different content owners, they all have a different idea of what they want consumers to be able to do with their content, what limitations they want on the content, and all of those variables turn into pricing variables within your business model equation.

So to Mr. Poole's point, I agree with him. Will the industry eventually get there? Absolutely. The question is how long is it going to take, and how much risk is there that because there is not aggregated content offered at a very fair and compelling consumer price point, what is the probability that the lack of that drives consumers to the pirate networks? Is that——

Ms. LOFGREN. Which is exactly what happened with music.

Mr. HAUSMANN. Correct.

Mr. JACOBS. And to music, we can talk with some experience. We know that while there may be a definition of fair use that everybody can quote, that people don't have that definition of what fair use is to them. They want to know what is fair to them, and just like all people are different, that answer is different no matter whom you ask.

Ms. LOFGREN. If I could, I just—I think there is different expectations and not everybody in the world has the same expectation, but I think—and they are not all fair use issues either. I mean, most people think you should have a right to have a backup copy of your software, and that doesn't mean that you have to allow it to be copied. It could mean that you allow—you register it and you go to the Web site, and if you have lost your disk or whatever, and get another copy. Most people—this is a first amendment—for expressive speech, that you should be able to quote and criticize ideas that have been expressed. I mean, that is fair use, and then there are other things where do I have to watch it at 9 p.m. or can I watch it, you know, tomorrow morning at 10 a.m. that I think we can define. This would be—Mr. Berman is correct, this would be a nightmare of a markup, but I think that, you know, as we sort through this unless we take a proposal whole cloth, I think in the end we will encourage content holders to trust the protection once the consumers are satisfied that their rights have been respected, and I think most people don't want to steal stuff. I mean, that is the assumption. Most people are not thieves. Otherwise, you know, you would have CDs walking out the door in backpacks a lot more than you do.

I think we need to make this work, and either the market needs to make it work, or maybe we need to have some role in defining rights and responsibilities to help the market to make it work. But I think this hearing has helped move us forward in that effort, and I do thank you all for your wisdom.

Mr. HAUSMANN. Let me if I may at least acknowledge to Mr. Berman's point, it would be a nightmare of a markup. I am not suggesting it wouldn't. You asked the question and I gave you the answer.

Mr. COBLE. I thank the gentlelady. The gentleman from Virginia.

Mr. BOUCHER. Well, thank you very much, Mr. Chairman. I want to thank these witnesses, who I think have done a terrific job today and they have responded to our questions and we are better informed by virtue of their presence here. So thank you for what you have done today. Let me just say whether you support legislating in order to enhance fair use protection or restore lost fair use protection or perhaps define fair use, and I think that some legislation in this general area is appropriate and something we should consider, what really pleases me today is to hear everybody at the witness table and also among the Members singing the praises of fair use.

Now, this is something that is fairly new. This is a new leaf. It is a new chapter, and I am very pleased to see it, and I think it speaks a new sensitivity that is highly appropriate and perhaps at some point will be reflected in proper legislation.

I want to take the time with these questions to focus on one very precise issue, and that is the question of copy protected CDs, because I am a little bit perplexed about the need for this, what it really achieves. It comes at a very high cost in terms of angering millions of Americans who have historically exercised their fair use rights to make copies at home of the music they have lawfully acquired so that they can rearrange the tracks or perhaps blend in music from other CDs they have also lawfully acquired and then have a play list on their homemade CD that contains exactly the music they want in the order in which they want it. This is a classic fair use right. It is space shifting, and it has been exercised now by millions of Americans. They are going to be pretty angry when copy protected CDs come flooding into the market.

And I have got a couple of questions. First of all, at a minimum it seems to me that copy protected CDs ought to be adequately labeled so that the consumer knows exactly what he is buying. Now, I have taken a look at More Fast and Furious and the Charlie Pride CD and, yes, if you examine it with an eye toward seeing whether or not it is copy protected, you might run across that information, but it doesn't exactly stand out. It is not the first thing you see, and it is on the reverse side, and it is in very small print, and I actually had to tilt my glasses like this, which increases the index a little bit and I am able to read better, in order to see it. I just think at a minimum that information ought to be right out there and available for the public.

Now, some of these copy protected CDs also come with reduced functionality in terms of your ability to play that CD in a CD-ROM in a DVD drive or even in some portable CD players I am told. Now, Mr. Jacobs, I don't know that those problems are inherent in your particular technology, but they are in some of the ones that are being used. I have already mentioned the fact that I think this may not be a particularly effective way to strike at a real problem. What the music industry has said to us is that the major problem with regard to music piracy today is free peer-to-peer Internet-based file sharing. Copy protected CDs, if you think about it, really don't do very much to guard against that. Why? Because somebody is going to use the felt-tipped pen, which I hope never gets to be declared a circumvention device, but somebody is going to use the felt-tipped pen, or they will find another way to crack another copy protection technology very rapidly, within a matter of weeks of each technology being introduced into the market. When that happens, that music is then going to be uploaded to the Internet in the clear, and once it is up there, it is going to stay there. It is going to make its way into the file sharing services, and so the copy protection really doesn't do anything to address what the record industry has told us is their primary concern. What it appears to do is make more difficult the kind of casual copying and the giving of a CD to a friend, which is a kind of a low-level misuse of copyright that the industry has heretofore simply accepted.

Now the industry will have some protection against that, but the cost of that is angering millions of their best customers, I mean, making those customers very, very angry. And so I have got to ask why we have to do this. I think it is a mistake, and I have told the industry this. We have had some in-depth discussions about it, but I just believe it is a kind of a rush to judgment based upon a wrong conclusion.

Let me ask you one precise question, Mr. Jacobs, and you can comment on any of this that you like, but I am a little bit curious about your specific copy protection technology, which I understand is based on the difference in error recognition capabilities between the CD player on the one hand and the CD-ROM drive in the computer on the other hand. Now, what is going to happen when somebody introduces into the market a CD-ROM drive that mimics the characteristics of the CD player, so that the error recognition differences are eliminated? Now, your technology is defeated. Would you at that point say that that new drive is a circumvention device and therefore unlawful, or do you think some of the people who have utilized your technologies might say that? I am really curious about what your reaction will be when that eventuality arises.

Mr. JACOBS. Well, thank you. My reaction would be and is that every 2 or 3 weeks, we begin thinking about exactly what we are doing today and trying to figure out how to do it better. We don't have 30 days to stand still in our design and redesign of formats that we think will broaden fair use and at the same time thwart the latest copy protection, anti-copy protection schemes. When the record companies first asked us to look into a specific design, it was with the intent to create a legal way for people to make copies from their CD rather than use ripping programs, because they felt that using the ripping programs was not a licensed method of making copies, and so what we did was we combined DRM files on top of the CD files with which people could then migrate those files over to their computers and with some restrictions make copies for themselves, make a copy, burn a copy, send a copy to a friend via either e-mail or a licensed server that we operate.

So in answer to your question, that technology that you are describing where we modify a specific channel on a CD, that has already been changed, and in answer to the question of what happens when a CD-ROM player comes out and ignores what we have done and plays the disk anyway, then the answer is that protection won't do any good anymore for that particular CD.

And lastly, and I think this is a very important consideration, is that unless we deal face to face with peer-to-peer networking that none of this makes any sense, that unless—with regard to music. With regard to music, if we found a model that delivered MP3 or WMA files directly into people's homes free on an advertiser-based basis or some other revenue generating basis, then the combined technologies, if that were implemented, would make all the sense in the world, because the CD quality piece of music is much more higher quality than an MP3 piece of music.

And let us lastly remember that most people, for me I try to remember this, that most people don't download music out there. Most people buy their music at a CD store, a record store still, and that many of the people who do download, download specifically to get music quickly, into their hands quickly, and aren't satisfied with the quality of the music that they receive, and oftentimes find themselves buying the CD, because it is a real pain in the neck to go and try to download 12 songs or 10 songs or 8 songs from a particular album. Not all albums have only one hit that you want to hear. There is a lot of good music out there, I think, that is a multi-track kind of situation.

So for those reasons we are moving toward more versatility in the marketplace, because, goodness knows, everybody wants fair use. Everybody knows that the customer will dictate what fair use is at the end of the day, and I think our company was both a pioneer in that, and we are trying to evolve toward an end that is acceptable to the public. But like I said before, what fair use is to the public and what fair use is as defined by law are two completely different things. They think they have a right—people have a right to copy—make unlimited copies in any venue because——

Mr. BOUCHER. Well, Mr. Jacobs, we are going well beyond the scope of the question here.

Mr. JACOBS. Oh, I am sorry.

Mr. BOUCHER. Let me thank you for your answer. There is food for thought in all of that that could keep us here for another couple of hours, and I would personally like to do it. The Chairman would not hear of it, I am confident. So I am going to say thank you, Mr.

Chairman, for your indulgence in permitting this very lengthy hearing which I think has been very useful. Thank you to all of the witnesses.

Mr. COBLE. I thank the gentleman from Virginia, and I want to reiterate what has already been said at expressing thanks and appreciation to the panelists and to the attendees. The interest of the attendee is apparent by the fact that you are still here.

Now, there will not be a third round, but since the Ranking Member from California is an amiable sort of a fellow, he would like to make one final statement and I am pleased to recognize him now.

Mr. BERMAN. Thank you, Mr. Chairman. I just want to make just a couple of observations. One is in the context of Mr. Hausmann's comments. My staff handed me a note. It points out that in the old brick and mortar world, if you go to Wal-Mart, which is the biggest retail distributor of music, they are carrying about 2,000 labels in the store. These online services, which have—with whatever problems they have, each have 50,000 titles or more of music. The potential for the consumer to more readily and more easily get copy protected music of an incredible variety online than ever they were able to deal with in the old world, which is still the real world for many of the music buyers, is enormous.

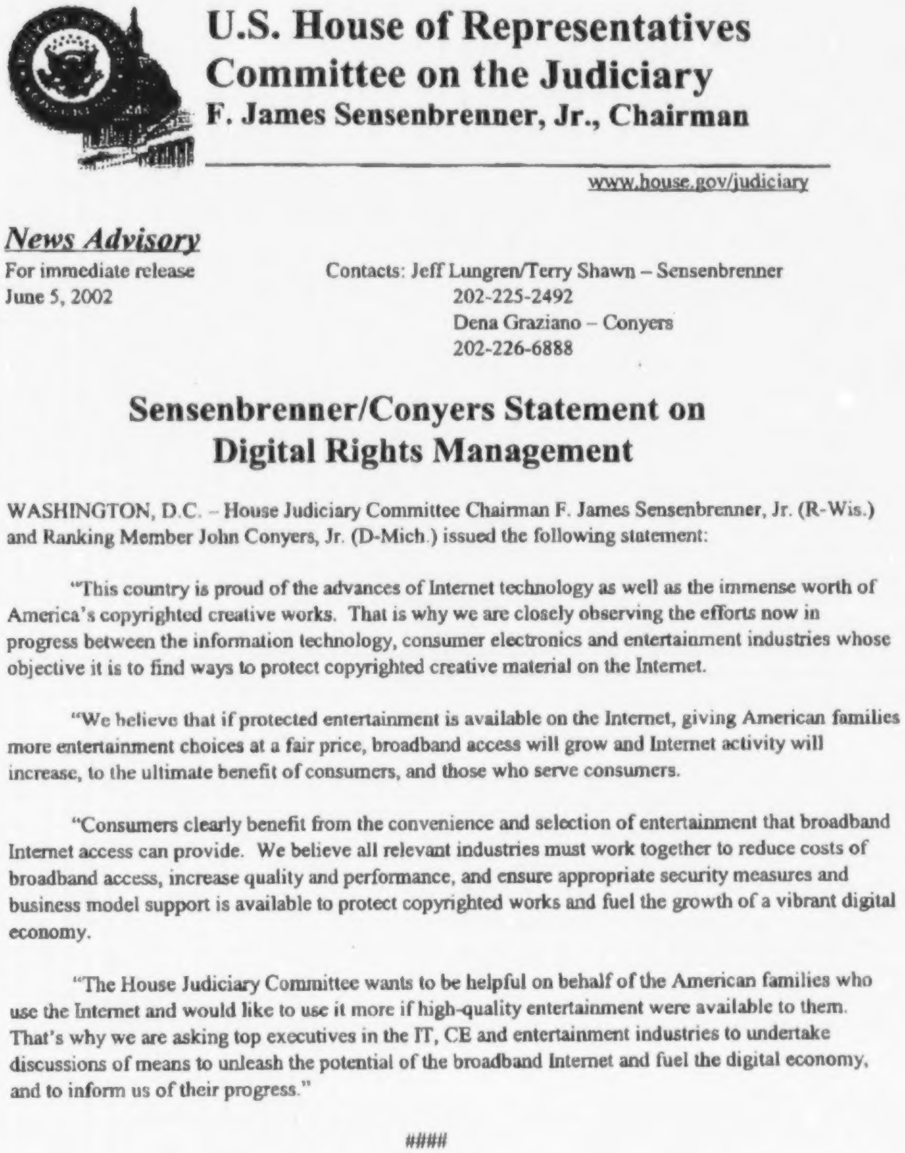
So the notion there are millions of consumers screaming about the outrage of the present situation may well be true. They are not so much screaming in my ear, but I have no doubt that there are people around who could get them to scream in my ear very quickly. But I think, at least in my own mind, this notion of the consumer or the right to have certain copies on the list of priorities of consumer needs is still somewhere below finding health insurance at an affordable price, having an adequate amount of affordable housing. I mean, when we talk about some of the outrages, that there are things I could get even more outraged about than the present situation with online music, and as to the desire just to make a couple of copies, the person who believes that is the prevalent desire in all of this hasn't spoken to my daughter about the use of peer-to-peer and file swapping in terms of getting music. And I think at least at a certain age level, it may not reflect the desires of a certain group of consumers of music.

Thank you, Mr. Chairman.

Mr. COBLE. I thank you, sir, and I have not yet done so, but at this time I want to thank the staff. Both Democrat and Republican staff members worked very diligently in getting this to where we are. This has been a very good hearing, folks, and I thank you all. I remind you again of the availability of the digital piracy statement at the press desk in the rear of the hearing room, and I thank the witnesses again for your testimony. This Subcommittee very much appreciates your contribution.

This concludes the oversight hearing on Digital Rights Management, DRM. The record will remain open for 1 week. The Subcommittee stands adjourned.

[The information referred to follows:]



U.S. House of Representatives
Committee on the Judiciary
F. James Sensenbrenner, Jr., Chairman

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News Advisory

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Sensenbrenner/Conyers Statement on Digital Rights Management

WASHINGTON, D.C. – House Judiciary Committee Chairman F. James Sensenbrenner, Jr. (R-Wis.) and Ranking Member John Conyers, Jr. (D-Mich.) issued the following statement:

"This country is proud of the advances of Internet technology as well as the immense worth of America's copyrighted creative works. That is why we are closely observing the efforts now in progress between the information technology, consumer electronics and entertainment industries whose objective it is to find ways to protect copyrighted creative material on the Internet.

"We believe that if protected entertainment is available on the Internet, giving American families more entertainment choices at a fair price, broadband access will grow and Internet activity will increase, to the ultimate benefit of consumers, and those who serve consumers.

"Consumers clearly benefit from the convenience and selection of entertainment that broadband Internet access can provide. We believe all relevant industries must work together to reduce costs of broadband access, increase quality and performance, and ensure appropriate security measures and business model support is available to protect copyrighted works and fuel the growth of a vibrant digital economy.

"The House Judiciary Committee wants to be helpful on behalf of the American families who use the Internet and would like to use it more if high-quality entertainment were available to them. That's why we are asking top executives in the IT, CE and entertainment industries to undertake discussions of means to unleash the potential of the broadband Internet and fuel the digital economy, and to inform us of their progress."

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[Whereupon, at 5:10 p.m., the Subcommittee was adjourned.]

APPENDIX

STATEMENTS SUBMITTED FOR THE HEARING RECORD

PREPARED STATEMENT OF WILLIAM KREPICK

Thank you for considering Macrovision Corporation's input for the Subcommittee Hearing. As a leading intellectual property protection and digital rights management technology company, Macrovision is in a unique position in the "neutral" zone between the hardware companies and the content companies. There is no question that debate over digital rights management (DRM) and copy protection technologies between these two industry groups and consumer activists is spirited. However, at the end of the day, one must evaluate proposed intellectual property rights management solutions based on ease of use by consumers, security, flexibility, low cost, and transparency to both installed and new hardware.

At Macrovision, since 1985 we have pioneered copy protection and rights management solutions for video, pay-per-view, DVD, consumer and enterprise software and music CDs. We have been working co-operatively with industry groups such as the Copy Protection Technical Working Group (CPTWG), the Broadcast Protection Discussion Group (BPDG), the DVD Copy Control Association (DVD CCA) and the Video Watermarking Companies (VWM) to design solutions to address the intellectual property protection challenges posed in both digital and analog environments. The Digital Millennium Copyright Act effectively demonstrated that positive government legislation and enforcement actions can effectively balance the diverse interests of consumers, the consumer electronics and PC industry and the copyright (content) industry.

Macrovision (Nasdaq: MVSN) *(www.macrovision.com)* has copy protected over 3.5 billion VHS videocassettes and, in the last four years, one billion DVDs. Our copy protection technology is embedded in virtually all DVD players and over 75 million digital set-top-boxes, including over 90% of those used in the UK, North America and Japan. We have copy protected over 200 million CD ROMs containing PC games. These statistics and our company's extensive copy protection customer base, which includes all the major Hollywood studios, hardware suppliers to the satellite and cable TV industry, the major PC games publishers and the optical media manufacturing infrastructure, have resulted from a sustained 15 year focus on developing effective copy protection and DRM technologies. DRM technologies comprise various software-based electronic and security solutions that are designed to enable copyright owners to license and market their copyrighted content across a variety of mediums—whether that be physical goods such as CDs and DVDs, wired or wireless electronic transmissions, or the Internet. Copy protection is a critical element of most digital rights management technologies.

In the past few years the world has changed dramatically from one in which most intellectual property and copyright theft occurred when people would make Xerox copies or simply shoplift physical items. In today's digital world, we are facing widespread electronic content shoplifting. Today's shoplifters can achieve this with their PCs in the privacy of their own home where they are immune from arrest by police and enforcement agencies. In the physical world many retailers estimate that they lose about 2% of their revenues to shoplifters. In the digital world, the pilferage is far higher. National consumer surveys have revealed that between 10–20% of the population routinely engages in some type of unauthorized copying—whether using CD burners, videocassette recorders, or file sharing services. The percentage is of course much higher among young, technically agile PC users.

With the advent of mass consumer broadband access, the requirement for enhanced content protection and secure DRM solutions has become paramount if owners of premium content are going to use this medium. The issues surrounding digital content delivery have become more critical—how do we safeguard digital content delivery and access? How do we protect the rights of the content owners once the content has been accessed? How do we enable flexible usage model or re-distribution models, so the content owners and their distribution and consumer channels can optimize the advantages offered by the digital age? Without a secure solution, content owners are unlikely to authorise the transmission of their premium content, thereby limiting growth in the digital marketplace.

The solution to these problems is effective content protection and DRM infrastructure, and a legal structure that protects copyright holders but also technologists and consumer electronic manufacturers. One of the most dubious phrases used in the current inter-industry debates is that of copying for "fair use" or non-commercial benefit. If someone makes a copy of a DVD or TV program and puts it on the web, it may well have been done for non-commercial benefit. However, it is unlikely that rights owner (and the entire supply chain) who may lose tens of thousand of displaced sales opportunities as a result, will feel that they have not suffered a significant commercial loss and infringement on their copyright.

"Fair Use" is often used as a smokescreen to deride copy protection and DRM technologies. Consumer rights activists may state that they have a right to make unlimited copies once they have purchased the first article. In fact, fair use laws were intended to provide the consumer with the right to do what they wanted with the original article, but that never included making unlimited additional copies. In the digital world, this fair use concept must be redefined in such a way to protect the intellectual property owner. Copy protection and DRM technologies can in fact support the fair use concept and can allow time shifting (use the purchased product or program at a later date) and space shifting (use the purchased product or program in one or more playback devices).

Many consumer rights activists have warned that copy protection and DRM technologies will impose an unfair cost burden on all consumers—because hardware and content prices will carry an intellectual property protection surcharge. Fortunately most DRM and copy protection technologies can be implemented at a cost of pennies for each software unit (CD, DVD, or pay-per-view program) and nickels and dimes for each hardware device. The actual cost of these technologies (including all royalties and implementation costs) is on the order of a small fraction of one percent of the retail prices. This means that the DRM and copy protection costs are well under 10 cents per disc or per program, and in the range of 25–50 cents per hardware device. This is way under the 1–2% hidden tax that we as consumers have historically paid for physical goods—due to the fact that retailers gross up their prices in order to recoop the shoplifting losses.

Effective copy protection and DRM technologies actually expand new business opportunities. Many articles written about copyright reform legislation point out that the Hollywood studios were able to grow a substantial video business, even though the studios themselves predicted the obliteration of the movie industry once the VCR installed base became significant. Of course we all know that the VCR actually stimulated the growth of a "new" $16 billion prerecorded media business. One fact is often overlooked in this growth story is that the studios had access early on to a fundamental rights management technology—electronic copy protection on videocassettes—which meant they were not at risk to wholesale unauthorized copying. With the introduction of DVDs, a new encryption technology and a new version of Macrovision's copy protection technology helped provide the copy protection security that was required by the studios before they would release their valuable movies on the new optical disc format. Unfortunately the same cannot be said for the music industry—which has been without effective copy protection since the advent of the CD—and which last year suffered a decline in revenues due in large part to unauthorized CD copying and Internet file sharing.

Macrovision and other vendors are hard at work developing effective copy protection, rights management and authentication solutions for music CDs that will allow the intellectual property owner to receive proper compensation for his/her works. The music industry recognizes that consumers have historically made copies and compilations of CD albums. A copy protected and DRM-managed CD can allow this and it can also add to the consumers' music experience. A new category of "multi-session" copy protected and DRM-managed CDs will provide consumers with new features via computers and the Internet, enhanced packaging, and additional entertainment, information and added value that had not previously been made available on non-copy protected, non-DRM-enabled CDs.

In the video market we are working to establish an effective digital video copyright protection "ecosystem" which includes bilateral solutions comprised of matching hardware and content based watermark technologies. The video watermarking solution has been proposed by the DVD CCA industry trade group. Macrovision, Digimarc, Hitachi, NEC, Philips, Pioneer and Sony have formed the Video Watermarking (VWM) Companies to offer a best-of-breed video watermarking solution for digital video applications. The combined engineering talent, intellectual property, product performance, marketing and support infrastructure of our seven companies is unparalleled in the field of video watermarking. This watermarking technology protects video content on DVDs, videocassettes, cable or satellite transmissions, and the Internet from unauthorized copying to recordable DVDs, DVHS, personal digital video recorders (PVRs) and multimedia personal computers. The digital watermarking system complements Macrovision's analog copy protection technology and will serve to plug the "analog hole."

The video, music and software industries need more secure and more versatile intellectual property safeguards. At Macrovision, we believe that unless there is implementation of broadly adopted technology-based copy protection and DRM solutions, content holders will be reluctant to release premium digital content through the Internet, which is essential for stimulating broadband and the consumer electronics sales. We believe the private sector is able to take the lead role, in conjunction with supportive government legislation and follow-through in essential copyright areas as well as compliance and enforcement.

This paper has attempted to describe how technology for content protection and DRM can provide for and support consumer friendly, robust, secure, and cost-effective solutions that can enable content owners to navigate the digital highway with confidence and optimize the new opportunities offered by the Broadband Economy.

In closing I would emphasize three important points for the Committee to consider:

(1) Copyright protection and DRM technologies are essential tools for the U.S. intellectual property and copyright industries—which are the largest and most innovative in the world. They must be nurtured and protected by copyright laws—and that includes outlawing any circumvention devices, techniques, or Internet "hacks" that might be promoted in the name of "fair use."

(2) Copy protection and DRM technologies are proven, cost effective, and unburdensome to the consumer. The free market economy is doing a good job at sorting out which competitors' products will win in the marketplace. However, in certain situations, as in video watermarking, where it would be costly to force the hardware manufacturers to implement multiple solutions, industry standards make sense, and in these situations the government needs to recognize that consortiums of companies should be allowed to come together to offer a single solution under fair and non-discriminatory terms.

(3) If industry groups cannot resolve their differences in a timely fashion, the government should be ready, willing, and able to establish standards and if necessary select certain technology solutions in order to promote the adoption and deployment of copy protection and DRM technologies in order to spur the distribution of digital content in the future.

PREPARED STATEMENT OF NEIL MACDONALD

Mr. Chairman and members of the Subcommittee, my name is Neil MacDonald and I am a vice president and director of research for GartnerG2, a technology market research firm. I thank you in advance for the opportunity to submit a written statement to present GartnerG2's view on digital rights management, consumer expectations and the media industry.

With last week's committee hearings on digital rights management serving as a backdrop, here are the basic tenets in GartnerG2's view:

1. GartnerG2 is in full support of updating copyright law for a digital age.
2. GartnerG2 believes that digital rights management technologies are not, and can never realistically be expected to be, impervious protectors of copyrighted content. Digital distribution business models must be built with that reality recognized.
3. GartnerG2 believes digital distribution will only succeed if consumers' attitudes, behaviors, expectations and responsibilities evolve concurrently with business models.
4. GartnerG2 believes that consumers need to be better educated about copyright law, rights and responsibilities in the digital age.

1. GartnerG2 is in full support of updating copyright law for a digital age.

Regardless of how the content is formatted and delivered—whether through a physical device such as a CD, or as a digital file—artists and content creators need to be compensated for their work. This is especially true as file-sharing services and networks flourish and piracy grows.

The transition from the analog age to the digital age has not been smooth. The technology industry is designing products and services that allow any content to be distributed over any network to any device and to be consumed in a personalized manner.

In contrast, the media industry, acting as content gatekeepers, is reluctant to embrace digital distribution in any form until the technology supports revocable content rights and secure delivery over networks. The media industry envisions a world where content is locked to the device, with no provision for copying or moving the content. Their hope is to eliminate piracy.

Finally, law-abiding consumers want more control over their media consumption and demand full portability over assets they believe they own after paying a fair price.

These opposing forces are disrupting media industry business models, pulling apart potential consumer audiences, and stifling demand due to uncertainties over competing content standards and consumption platforms. In short, these forces are slowing the transition into the digital age.

2. GartnerG2 believes that digital rights technologies are not, and can never realistically be expected to be, impervious protectors of copyrighted content. Digital distribution business models must be built with that reality recognized.

There is a misperception, fed at times by the trade press, that digital rights management solutions can rid the Internet and the world of piracy, and that t a "magic bullet" exists that will make technologies such as peer-to-peer file-sharing go away. This is false. Digital rights management products cannot provide an absolute solution. They will always be a work-in-progress.

Digital content today is easily available and pirated. Tomorrow, it will exist as protected content that is leveraged to create new business models and new business opportunities. Digital rights management solutions can help make future business models secure, but cannot change the past.

There is no argument that a lack of a standard for digital rights management has hindered the market. Usage rights for digital content vary with both individual service providers as well as individual record labels, each offering rights and permissions that are confusing at best. The lack of technical standards for the digital rights management, as well as the business model rules put the onus on both the technology companies and music labels to come to a consensus. This must be a market-driven consensus, not a government mandate.

Any digital rights management standard should be reviewed periodically—annually or semi-annually—because it will be subject to ongoing attempts by hackers to crack the protection enabled by digital rights management solutions. It is the nature of hackers to go after high-profile security solutions, and market-driven standards are big targets. The goal of the review would be to ensure that the bar for digital rights management has been pushed high enough to prevent casual piracy. The byproduct of a market-driven standard will be to keep piracy of new digital content to a minimum level, well below today's level where tens of millions of people access pirated content for free.

3. GartnerG2 believes digital distribution will only succeed if consumers' attitudes, behaviors, expectations and responsibilities evolve concurrently with business models.

GartnerG2 refers to the current generation of teenagers as the "Generation of Thieves." Recent GartnerG2 researchi shows that not only are online U.S. teenagers heavy users of file-sharing services, but their attitudes regarding copyright laws are poor.

When asked if they downloaded music using file-sharing software, 55% said they already had. Another 34% said they hadn't yet, but were very or somewhat interested in the software. Only 11% answered that they did not use file-sharing software and had no interest.

Asked whether they downloaded music from legal, paid-for sites, only 6% said they did. Of those who didn't use legal sites, 36% were very or somewhat interested in using the sites. The bad news is that 60% said that they didn't download from the legal sites and had no interest in doing so.

Teenagers find piracy to be easy. They have no fear of being caught, and the existing business models for legal music distribution are not compelling to them. This lack of interest is more indicative of business model issues than the lack of proper digital rights management.

The same online teenage group was asked how strongly they agreed or disagreed with the statement that "Internet file-sharing Web sites violate copyright laws:" 25% did not feel strongly either way, 25% agreed. But, most importantly, 50% disagreed. This group is the most important, because it indicates the lack of understanding by teenagers—the consumers of tomorrow—of copyright law.

The alternative to piracy, for few users, is to pay a subscription fee for compelling download services. It sounds simple, but, in the case of the music industry, current services are interesting but not compelling for a majority of consumers. To compete against the free file-sharing sites, music services must be both reasonably priced and support a modest amount of portability for users' time and location shifting. But because of limited distribution licenses issued by the music labels, the services can only offer limited selections.

Consumers expect to buy music only once and have some portability with that music within their home, portable music player or car. These fair-use practices of time and location shifting have yet to be allowed by the music labels on a widespread basis, as there are very few services today that offer any portability. Until the music labels embrace digital distribution and move their own business models beyond CD sales, consumer uptake of digital distribution will be slow and piracy will thrive.

4. GartnerG2 believes that consumers need to be better educated about copyright law, rights and responsibilities in the digital age.

As a matter of public policy, this Subcommittee could help develop the path for better education of teenagers on copyright law in general and on its continuing importance in the digital age. While some of the onus of educating consumers of their rights and responsibilities in the digital age falls on those who sell products and services, a fundamental understanding needs to be instilled at the high school and collegiate levels.

GartnerG2 submits that this Subcommittee should strongly consider mandating digital copyright law into the curriculum at middle, high school and colleges, especially those that provide Internet access via the school's infrastructure. This education could help turn around the lawless attitudes of the 10 million online teenagers in the country.

MATERIAL SUBMITTED FOR THE HEARING RECORD

Association for
Competitive Technology

June 4, 2002

Howard Coble
Chairman

Howard L. Berman
Ranking Member

Committee on the Judiciary, Subcommittee on Courts, Internet, and Intellectual Property
B-351A Rayburn House Office Building
Washington, DC 20515

VIA FACSIMILE to the Subcommittee on Courts, Internet, and Intellectual Property

Re: Digital Rights Management Solutions

The Association for Competitive Technology (ACT) submits the following statement to aid the Subcommittee as it explores the subject of protecting digital content. ACT represents over 3,000 information technology (IT) companies and professionals, including those involved in creating solutions for transmitting digital content. We strongly believe that the marketplace, without the assistance of additional legislation or regulation, is in the best position to respond to the demands of consumers and copyright holders.

There is an estimated $270 billion market opportunity for digital content. The key to this opportunity will be effective, consumer friendly Digital Rights Management (DRM) technologies and solutions. With an estimated $3.5 billion market for DRM software by 2005, the technology industry, especially small and emerging companies, is already hard at work. Without a doubt, the emerging and maturing DRM technologies created will enable a secure electronic marketplace where content providers can be compensated for the legitimate use of their digital content.

Content owners remain hesitant to release content for fear that once a song or movie is lost to digital pirates, all value in the investment and commercial opportunities are lost as well. It is clear that at this point on the digital content continuum, it is critical that all parties move beyond the question of whether or not technology or government mandates can assuage this concern. All interested parties must recognize and address the question of *how* DRM technologies meet the needs of rights holders and computer users.

Building a viable digital distribution environment

The maturation of DRM technologies has created an environment for advancing the rights of copyright owners and the distribution of digital commerce. This environment

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involves three elements: trusted systems, a standard rights management language and trusted players.

A trusted system involves communications between or among computers that establishes a set of rules such as "terms of use" and "collecting of fees" be followed in order to execute the distribution of protected content. The backbone of the trusted system is public key cryptography. One method of conveying the rules is the use of a "challenge-response" scenario where a user's computer sends a message to a distributor coupled with a digital certificate. The distributor then "examines" the certificate for validity and releases the content. The development of a trusted system starts with a content owner's infrastructure. A solid infrastructure includes defined, organized and managed data about rights and permissions.

Technologies currently being used to build and implement trusted systems include digital envelopes in which content is coupled with a set of rights and an executable program for interpreting the rights. Another example of a trusted system involves creating a frequent dialogue between a legitimate user and content owners that constantly verifies proper rights and discourages piracy.

A second component to creating a digital distribution environment is a standard digital rights language. This language is responsible for conveying the rights associated with a piece of content. The eXtensible rights Markup Language (XrML) syntax is the leading example of a DRM language standard. XrML provides content owners the opportunity to specify data about royalty arrangements, ownership, listening limitations, and context pricing (e.g., sale or rental). This data is attached to the content, so it can "travel" across devices without degrading the copyright. Moreover, the number of licensees of the current and prior versions XrML's specification is in the thousands, and now that XrML is emerging as the industry standard language for digital rights, many new companies are beginning initiatives that will keep the DRM marketplace moving. Another benefit of XrML is that it is an open syntax that will breed open platforms.

ContentGuard, which developed XrML, is active in a number of standards efforts concerning Digital Rights Management. Besides MPEG, they participate in the TV Anytime Forum, Organization for the Advancement of Structured Information Standards (OASIS), Open eBook Forum (OeBF), Wireless Application Protocol (WAP) Forum, Society of Motion Picture and Television Engineers (SMPTE) Digital Cinema, and others.

The final parts of the equation are trusted players. Trusted players include software and hardware that allow for copy, transfer and (in the case of music and video) playback. The trusted player can also include embedded functions such as a billing system that will improve consumer convenience. A consumer's main interaction with a content owner is through the player, therefore it is critical that it is able to translate all of the trusted system's rules in a seamless manner. SightSound.com is one company that has developed an integrated trusted player for buying and renting movies online. SightSound tackled the challenge of handling credit card payment information and positioned itself as a leader for collecting payment on licenses of DRM protected content.

Examples from the "real world"

Developing and deploying a distribution system is no small task. It is expensive and requires a satisfactory ROI for the content owner while not creating a price or usability chasm that will drive away consumers. Some custom built distribution systems can cost upwards of $1 million. However, as demand for content grows and as content owners become "believers" in DRM capabilities, more commercial-off-the-shelf products will find their way to the marketplace.

A DRM-based subscription model allows content owners to bundle a large number digital content for a fixed price. In a variety of circumstances, a multi-product content owner can extract substantially higher profits by offering one or more bundles of digital media than by offering the same goods separately. At the same time, bundling can be used to introduce new songs, movies, documents and titles to create a continuous relationship with the consumer. This relationship offers a foundation on which content owners can generate revenues. Forrester expects additional revenues from digital music subscriptions of $3.3 billion. Subscriptions provide flexibility that will attract consumers. For example, a premium membership might offer a flat rate, eventually combined with services from the second scenario, while an advertising-based membership might limit access in quantity, time or actuality.

DRM technology is used to securely encrypt the music with a key and then the package is digitally delivered to the consumer's device. There, the locally installed trusted tool gains access to the digital content with an unlock key which leaves the file locally encrypted and streams the digital content into the memory for "on the fly" decryption. The user, who has agreed to the terms and conditions of use, now has the license to access the content. His usage is recorded and the transaction is reported to a clearinghouse to initiate payments and backup system information. The content owner is being protected and maintains control and determines payment collection.

DRM Networks, an Arizona company, has developed and is currently marketing a subscription distribution model. Their "dMESH" solution allows content owners to provide a 30 day window for consumers to view a collection of movies. Consumers can choose from three different "packages" of movies. More about dMESH and its capabilities can be found at http://www.drmnetworks.net/solutions.html.

This subscription model, or any other for that matter, will only happen if DRM solutions continue to be interoperable and easy to use. In order to meet these goals, it is imperative that content owners, device manufacturers and software developers invest in new technology, take risks on new business models for the online world and continue to work together toward the adoption of open standards.

Conclusion

The development of DRM technology will take two things: continued innovation and time. The massive opportunity that a digital content marketplace represents ensures that, nothing – especially government technology mandates – should stand in the way of technologies aggressively competing to create solutions that protect the rights of content owners while meeting the needs of consumers. Creating this environment will lower digital distribution costs and enhance the user's experience. It is a win-win for consumers and content owners.

As you continue to consider this issue as well as the broader DRM debate, ACT stands ready to offer any and all assistance.

Sincerely,

Jonathan Zuck

Jonathan Zuck
President

Cc: F. James Sensenbrenner, Jr.
Chairman

John Conyers, Jr.
Ranking Member

Committee on the Judiciary

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June 5, 2002

Chairman Coble
Subcom. On the Courts, the Internet and Intellectual Property
B-351A RHOB
Washington, DC 20515

Dear Chairman Coble, Representative Conyers and Members of the Subcommittee:

We are writing on behalf of the Electronic Privacy Information Center (EPIC) and the Electronic Frontier Foundation (EFF) to express our organizations' views on the effects of digital rights management (DRM) technologies. We appreciate the Subcommittee's decision to hold a hearing on this topic on June 5, 2002 and request that this statement be included in the hearing record.

Today's hearing focuses on the consumer benefits of DRM, but the panel is comprised only of representatives from businesses developing content control systems, and omits the most important stakeholder in this debate—the consumer. DRM poses serious risks to consumer and societal rights, including privacy, fair use, free expression, and innovation. We encourage you to hold more hearings on these issues that include the entire spectrum of stakeholders so that the following risks can be considered:

- **DRM weakens consumers' privacy.** Today, individuals are free to explore different ideas presented in books, music, and movies anonymously. DRM encroaches on this right by allowing copyright owners to monitor private consumption of content.[1] In an attempt to secure content, many DRM systems require the user to identify and authenticate a right of access to the protected media. In the case of Microsoft's eBook Reader, this means that the media software and users' choices in books are digitally linked to the hardware system and to the Passport profiling system.[2] Some systems, such as Microsoft's Windows Media Player, assign a Globally Unique Identifier (GUID) to the media device that facilitates online tracking.[3] These systems create records that enable profiling and target marketing of individuals' tastes by the private sector.[4] Law enforcement can also gain access to these records by subpoena or by simply purchasing them.

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[1] Julie Cohen, *A Right to Read Anonymously: A Closer Look at 'Copyright Management' in Cyberspace*, 28 Conn. L. Rev. 981 (1996), at http://www.law.georgetown.edu/faculty/jec/read_anonymously.pdf

[2] *Copy Protection: Just Say No*, COMPUTERWORLD, Sept. 4, 2000, at http://www.computerworld.com/managementtopics/management/opinion/story/0,10801,49358,00.html.

[3] *Serious Privacy Problems in Windows Media Player for Windows XP*, COMPUTERBYTESMAN, Feb. 20, 2002, at http://www.computerbytesman.com/privacy/wmp8dvd.htm.

[4] Chris Jay Hoofnagle, *Consumer Privacy in the E-Commerce Marketplace 2002*, 3rd Annual Institute on Privacy Law 1339 (June 2002), at http://www.epic.org/epic/staff/hoofnagle/plidraft2002.pdf.

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- **DRM weakens consumers' "fair use" rights.** Fair use is an evolving concept and probably can never be defined precisely by code. However, the nature of fair use is not a shortcoming, but rather a strength that grants the courts an opportunity to mediate the tensions arising between law and new technologies.[5] Fair Use includes libraries' and educators' rights to provide content to users, the right to sell physical copies of certain content that one acquires lawfully (the "First Sale" doctrine), and the ability to make a backup copy of software and music. No DRM scheme developed affords users these rights.[6]

- **DRM threatens consumers' freedom of expression and the public domain.** DRM restricts access to the public domain at the whim of copyright owners and creates obstacles to the free flow of information, even for legitimate purposes. The Constitution grants copyright to authors for limited terms, after which works are supposed to enter the public domain. Even with legal authorization, an archivist cannot be confident in his ability to migrate and store content protected by DRM, particularly when limitations are placed on which devices can be used to access the content or when access is provided in conjunction with a pay-per-use system.

- **DRM threatens consumers with criminal sanctions.** Provisions in the Digital Millennium Copyright Act (DMCA) prohibit the circumvention of DRM, even where there is no commercial copyright infringement or criminal intent to defraud copyright holders.[7] Criminal sanctions are blunt instruments and should be employed with great caution in the copyright context. Until recently, penalties were invoked only for serious, damaging infringers, and not against non-infringers or de minimis infringers. DRM and the DMCA upset this balance.

- **DRM limits consumers' ability to use open source software.** DRM schemes and laws that require embedding copy protection into devices endanger the development of open-source software. Open-source software developers rely on reverse engineering to write programs that can interact with hardware. This practice is illegal under the DMCA. Additionally, some industry standards for copy protection must be "tamper-resistant." "Tamper-resistant" is defined in such a way that it makes open source implementations noncompliant.

- **DRM threatens consumers' expectations and sets the stage for a pay-per-use business model.** DRM can limit users' interaction with media. Over time, DRM can change users' expectations about control and use of digital content. For instance, some have speculated that DRM could condition individuals into

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[5] Jason Young, *Digital Copyright Reform in Canada: Reflections on WIPO and the DMCA*, Apr. 26, 2002, at http://www.lexinformatica.org/dox/digitalcopyright.pdf.

[6] Fred von Lohmann, *Reconciling DRM and Fair Use: Preserving Future Fair Uses?*, Conference on Computers, Freedom, and Privacy 2002, at http://www.cfp2002.org/fairuse/lohmann.pdf.

[7] Electronic Frontier Foundation, *Unintended Consequences: Three Years under the DMCA, May 3, 2002*, at http://www.eff.org/IP/DMCA/20020503_dmca_consequences.pdf.

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> believing that lending a book is a form of theft.[8] DRM developers also may be acclimating consumers to a pay-per-use business model, one where consumers lose rights to access content that they have purchased unless they pay for each use.

Both EPIC[9] and EFF[10] maintain extensive online resources on DRM technologies. We encourage the committee to draw upon these resources, in this debate. We also request to meet with you or your staff to discuss these issues.

Sincerely,

Fred von Lohmann /CJH

Chris Hoofnagle
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Electronic Privacy Information Center

Fred von Lohmann
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[8] Richard Stallman, *The Right to Read*, COMMUNICATIONS OF THE ACM, Feb. 1997, at http://www.gnu.org/philosophy/right-to-read.html.

[9] Electronic Privacy Information Center, *Digital Rights Management and Privacy*, at http://www.epic.org/privacy/drm/.

[10] Electronic Frontier Foundation, *Campaign for Audiovisual Free Expression*, at http://www.eff.org/cafe/.

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